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The Bristol Medico-Chirurgical Journal

" Scire est nescire, nisi id me
Scire alius sciret."

SPRING, 1928.

SOME DEVELOPMENTS IN DERMATOLOGY DURING THE LAST THIRTY YEARS.

Presidential Address, delivered on 12th October, 1927, at the opening of the fifty-fifth Session of the Bristol Medico-Chirurgical Society.

BY

W. KENNETH WILLS, O.B.E., M.B., B.CH.,

Physician in Charge of the Skin Department, Bristol General Hospital.

IT is my first duty and privilege to thank you for the honour you have conferred upon me by electing me to this Chair. This is the greatest honour that you have in your power to confer upon any of your members, and it is a matter of great pride to me that you have considered me worthy to occupy the Chair which has been so ably filled by my predecessors.

During the last thirty years none of your Presidents has addressed this Society on a purely dermatological subject.

Dr. A. J. Harrison in 1894 dealt with " Comparative Pathology," as illustrated by experience of the animals in the Clifton Zoological Gardens.

Dr. Henry Waldo in 1907 addressed the Society on

"Syphilis," just two years after the discovery by Schaudinn and Hoffmann of the Spirochæta pallida. He took the opportunity of noting the advance made by pathologists, and urged a closer connection between the clinic and the laboratory.

In 1923 Dr. Nixon directed our attention to the debt that medicine owed to the fine arts.

I have therefore thought that it may prove of some service to pass in review some developments in dermatology during the last thirty years.

This period is marked by a considerable development of the pathological investigation of skin diseases. It has been said that the successful dermatologist is he who understands the "skin and everything inside it." During these years much more attention has been concentrated upon functions of the body other than of the skin itself, in the attempt to understand the phenomena of skin complaints. Not only has the microscope been at work on the skin, but the batteries of the biochemist, the bacteriologist, the vaccinist, have been brought to bear upon the patient as a whole, and many cutaneous phenomena are now better understood as symptoms of a general diseased condition than as a local disturbance of the skin.

In 1907 Dr. Waldo could do little more than anticipate the profound effect that the discovery of the Spirochæta pallida would have upon the diagnosis and treatment of syphilis. In that very year Wassermann announced his "non-specific complement fixation test," and this with its subsequent developments has added enormously to our powers of diagnosis; so that, while much has to be found out yet to make this the reliable instrument we require, we have to acknowledge that we should be very poorly equipped in our treatment of syphilis without the guide which it affords.

In 1909 Ehrlich introduced salvarsan, which has led to a vast activity in the laboratories in producing endless preparations for the cure of syphilis. Some of these are proving by results to be curative of the disease in early stages with the minimum of damage to the patient.

In syphilis, therefore, we have advanced during the period under our review, not alone in the methods of diagnosis, wherein we are able to state definitely by dark-ground field that Spirochæta pallida is present, and that a sore is syphilitic, but we can thereby bring the case under treatment early enough for cure to be possible by one of the new remedies which lie to our hand.

By treatment we can also prevent the onset of the secondary manifestations of the disease so effectively that students have now little chance of studying the cutaneous phenomena which formed so large a part of the clinical material in the skin clinics of my student days. It is a matter of great importance to the public health that the infectivity of these early cases can be prevented, or at least arrested, early by these injection treatments, and thus indiscriminate spread of syphilis has decreased materially. The later symptoms characteristic of the so-called tertiary stage may often be healed rapidly and effectively.

It is when we come to consider the lesions of the central nervous system that we have to admit that all our hopes have not been realised. Indeed, there are evidences adduced which are, as yet, little more than impressions and rumours, that lesions of the central nervous system are more prevalent now than they used to be, and it is openly stated that this is due to treatment by salvarsan and its derivatives. On the other hand, statistics have been brought forward to show that there

are fewer cases of dementia paralytica, especially in women, and it is suggested that this is due to the shortened period of infectivity due to salvarsan derivatives. Yet while no one would hesitate to advise and carry out treatment which has such immediately beneficial results, it must be borne in mind that the remote effects of syphilis and its treatment may still be far-reaching and defy our best present endeavours.

I need not remind you of the attempts to affect the central nervous system by means of pyrexia-producing measures such as malaria and protein shock, but this carries me too far from my immediate purpose.

The term "protein shock" introduces another modern development, use of which is made in dermatology. Indeed, an entirely new vocabulary has been instituted bristling with terms such as "anaphylaxis," "acidosis," "sensitisation," "hostile protein," etc., all of which have their interest to the dermatologist.

The modern theories of *urticaria* exemplify in a concrete form the advances which have been made in the study of dermatology in recent years. No longer are we content to leave the subject of ætiology to be expressed by vague terms such as drugs and poison. We want to know what poison and the method of its working. The modern tendency is to explain urticaria as a phenomenon of anaphylaxis.

Anaphylaxis may be defined as a state presenting phenomena which arise in a sensitised animal as the result of the absorption of a subsequent dose of the same protein as was the original sensitising agent, or one nearly akin to it. There is evidence that urticarial lesions, both of external as well as internal origin, may be regarded as of anaphylactic nature. It has even been shown by Cranston Low that insect bites may reveal a sensitisation, and the severity of the wheals

be dependent upon a previous inoculation by such insects.

Where urticaria is due to an internal cause, we shall probably all admit that foods, such as fish and pork, eggs and certain fruits, which are liable to produce wheals or even constitutional disturbance akin to serum-sickness, can excite anaphylactic symptoms. These symptoms are due to foreign substances introduced from without the body; but there are also well-known instances of urticaria which have a relationship to hydatid cysts, menstrual troubles or operative interference, and even such injuries as may produce hæmatomata have been known to be followed by urticarial attacks. These may be regarded as anaphylaxis induced by proteins absorbed from the patient's own tissues which are acting as foreign substances, to which the patients are sensitised.

Not only so, but microbic organisms which are so placed in the body that their toxins are readily absorbed into the blood-stream may produce urticaria. To quote Cranston Low[1] again: "Focal infections, such as tonsillitis, pyorrhœa, abscesses at the roots of teeth, infections of the bladder and bowel, etc., have all been known to produce urticaria."

The removal of these sources of infection has cured the skin conditions. This may explain why urticaria occurs at times in cases of acute rheumatism, of malaria, of influenza or of pneumonia. The extraordinary phenomena seen in angioneurotic œdema, in which the swelling arises so suddenly and to such an intense degree as to cause danger to life, may be explained by anaphylaxis.

I once saw a patient, years ago, in whom the right side of the face advanced at me while I was speaking to her. One half of her forehead fell in a fold over her

eyebrow, the eyelids lay in pouches on the cheek, the cheek fell in a dewlap over the mouth, and the half lips fell sagging below the chin. The tongue was unaffected. In about ten minutes all had disappeared to normal again. This was before "sensitisation" had been suggested as an explanation, and I was quite at a loss to account for it. But she had rheumatism, and as great improvement followed on the administration of sodium salicylate, it may well have been of rheumatic or tonsillar origin.

Although so many cases of urticaria may be attributed to anaphylaxis, there are quite a number which cannot be thus explained. Among these are those cases which are associated with exophthalmic goitre. But even here it has been urged that the Graves's disease is secondary to sepsis, or at least that the normal control of the thyroid excretion upon septic toxins is defective. But there are still to be explained those cases of urticaria which attend the passage of a uterine sound, or seem to be the result of nervous emotion and fright, or that of the man whose hands were affected after the prolonged use of a mechanical vibrator. Such cases would tend to show that the nervous mechanism is affected, and the question as to what cells are affected—whether primarily the capillaries, the nerves, the endocrine glands or the blood with the development of such chemical irritants as histamine—has yet to be answered satisfactorily.

But we may note that we have travelled fast and far from the position of thirty years ago, when the explanation of a poison in the blood had to suffice. Even Wright's calcium deficiency theory no longer satisfies us.

The wall of our ignorance has been set back a little farther, and there are plenty of eager explorers who are doing their best to look over that wall.

When I alluded to urticaria as having been caused by microbic infections, I at once thought of other diseases which had been found to be associated with similar conditions. It has been found that the histological and local bacteriological examinations of skin lesions themselves have yielded little advance in the ætiology of such complaints as lupus erythematosus, psoriasis, dermatitis herpetiformis and pemphigus.

Lupus Erythematosus.—Evidence has been adduced that this complaint is dependent upon the action of toxins circulating in the capillaries but elaborated elsewhere. This disease attacks exposed parts, mainly face and hands, producing an erythema which relapses repeatedly and leaves a permanent scar of a most unsightly and distressing nature. It has long been recognised that actinic light is a factor in producing the cutaneous symptoms, but what activated the skin and made it susceptible to the action of light was unknown. Early it was supposed to be a tuberculide, but there are insufficient grounds for connecting all cases of the disease with tuberculosis. As far as this country is concerned, the lessened incidence of tuberculosis has not been attended by any appreciable decrease in the number of erythematosus cases.

We had to be content with the vague term "toxæmia" to indicate a hypothetical toxin in the circulation until Barber, in 1915, brought forward evidence to show that in one case under his control streptococci in the intestine were the source of the toxin. Since this observation has set us looking for foci distant from the skin itself, numerous cases of the disease have been treated successfully by removal of the septic focus, or by vaccines from organisms obtained from tonsils, teeth, antra, sputum, fæces, etc., with immediate relief of the active cutaneous lesions and

cessation of recurrences. While it may be too early to state that streptococci are the only organisms capable of producing this predisposing toxæmia, one may note thankfully the great advance which has been made by the discovery of the "focal toxin" factor in a disease which has previously proved so intractable.

Alopecia Areata.—The theory of "focal toxin" has been adduced to account for this hitherto unexplained phenomenon. When it is considered how poisonous to hair streptococci are (*cf.* erysipelas, scarlet fever, puerperal fever, pneumonia, and certain influenzal epidemics where possibly streptococci are responsible), it would not be surprising if streptococci in foci like the tonsils, etc., were found to be the exciting cause. Without discussing whether the organisms produce toxins which act upon the nerve endings (thus uniting the toxic, microbic and nerve theories), or whether they act upon the hair roots directly, it should be noted that some cases have been reported in which rapid improvement has attended the use of vaccines from a remote focus.

To quote a case from my own clinic: The patient had a tonsillitis early in December. On Christmas Day the hair fell off in patches. He attended at the hospital in January, and after a few weeks' treatment by streptococcal vaccines obtained from the tonsils by Dr. Hadfield, the hair began to grow freely at the beginning of February. The extraordinary rapidity of the growth suggests that the vaccines were directly responsible. "The time," as Sir Michael Foster used to say, "is not yet ripe for dogmatic statement," but there is certainly an indication that we are moving in the right direction with regard to the effective treatment of this common and troublesome complaint.

Psoriasis.—I wish that I could report that a similar

advance had been made in the treatment of psoriasis. It is true that the Wassermann test has been useful in eliminating the syphilitic cases where there has been doubt, that X-rays and actinic light have proved of temporary benefit in removing individual patches, but we are still unable to prevent the onset or sometimes to control the disease. One observation has been made which may lead to future developments. Accidental acute suppuration has been followed by the clearing up of the lesions. In a case of my own the patient was admitted to hospital with a general exfoliation consequent on extensive psoriasis which perhaps had been too vigorously treated. After some improvement had occurred from simple measures, exposures to the Tungsten arc lamp were begun. After further improvement he was given quinine, when his hands and forearms suppurated violently, his temperature rose, and his general appearance was one of toxæmia. In about three days the symptoms cleared up, and with this the psoriasis completely disappeared. Unfortunately, fresh small lesions appeared later, after his discharge from hospital, but this is a striking instance that something connected with the process of suppuration is inimical to the psoriatic process. Attempts have been made to influence the complaint by the injections of foreign proteins, and even by injections of the patient's whole blood, but without much success.

An interesting observation has been made by several observers, and recently by Civatte, that columns of leucocytes rise from the tops of the papillæ and spread out under the keratin layer, and it is supposed that these may have some hand in producing the parakeratosis which is the main feature of the complaint. No organisms have been found in the skin or blood which will account for this phenomenon, and until a

satisfactory reason can be found for this migration of leucocytes, the cause of psoriasis will presumably remain unknown.

Eczema.—Here some advance has been made In the first place several distinct diseases have been completely separated from this heading. For instance, *eczema marginatum* has now appeared under its proper classification of tinea. Cheiropompholyx has since been classified as a distinct clinical entity, and even this again has been shown to be due to two or more causes, one of which is a tineal infection.

Again, the large group of seborrhœic eczema has been separated from the main heading, until now there remains very little of what may be termed, for want of better knowledge, "eczema."

It may be well to remind ourselves that it has been sought to explain that catarrhal condition of skin termed "eczema" by three theories: (1) the diathetic —whereby the toxins associated with the gouty or arthritic state were held responsible for the skin condition (French school); (2) the nervous theory—to account for those cases which seemed to develop from overwork, shock and overstrain; (3) the bacterial infection theory—which was advanced by Unna, who described a coccus as the infective cause. This is now regarded as a harmless denizen of all skins. Since then further theories have been advanced, including (4) the faulty digestion or assimilation theory, whereby the split products of proteins or more possibly fats (fatty acids) are considered as playing a part in the origin of skin catarrh, (5) and the skin sensitisation theory, whereby it is sought to explain the acute exacerbations of eczema and their rapid retrogressions.

I have myself tried to show how these eczemas develop in persons as a direct "infection" from dry

dandruff in some individual who is in contact with the patient, if not from the patient himself. From clinical observation I have noted that this is almost universally applicable to all eczemas in children, and to a large majority of adult cases as well.

Dandruff itself comes and goes in a peculiar manner —at one time being so noticeable as to send the patient for treatment, while perhaps in a few days all trace of the dandruff may be gone. But the tendency to grow dandruff is found in families, and is by such regarded frequently as a normal condition of the scalp, whereas there are other families in which it is unknown. The marriage of a dandruff infected person with a clear-scalped individual may lead (and often does) to the infection of the latter. The children of this union will show eczema, especially if the mother is the infected one. If the father has it, and not the mother, the child will or will not show eczema according as to whether he has much or little to do with the child. Thus one family has been observed by Dr. Gee where the father was the source of the infection. When the first child was born the man frequently nursed the infant, who got eczema as the result. With the second and third children the novelty had worn off, and he had little to do with them, and they escaped. But with the fourth child the man was out of work, and was turned on to do nurse, and accordingly this child got eczema. I have observed that the parts affected in children are the exposed parts—face and neck, hands, forearms and popliteals. In school children the backs of the necks and ears may be affected, as though the school teacher had dropped scales on leaning over them. I have known even a small infant of only fourteen days old which developed a patch on that cheek which was uppermost on the nurse's arm. The nurse it was who had the

dandruff in this case, and not the parents. Since the fashion of wearing the hair short has come in, the parts affected by the eczema are higher up than they used to be, viz. the upper chest and shoulders, instead of interscapular and sternal regions.

Any cause of itching may lead to eczema development when there is a source of infection in the scalp. Thus one is not surprised to find that eczema developed from a flea-bite on the forearm in a clerk who had dandruff, his left arm being free at his work to scratch the head and the right arm, and thus produce the infection, or that a man working in paraffin developed an irritation on his forearms, and on scratching with dandruff-infected nails eczema ensued, and subsequently elsewhere on his body. After operations, burns and other traumata eczema may develop, and this may resist treatment until the scalp is treated too. In fact, this is constantly being observed clinically, but when one is asked to explain why dandruff may exist for years without any known cases of eczema following this is not so easy. It may be that cocci, or whatever the organisms may be, have their toxicity raised by the excreted waste products which pass through the skin glands from time to time, but that periods of non-toxic saprophytic growth may occur. If this waste material is of protein or split product origin (*e.g.* uric acid, butyric acid, etc.), then the "arthritic" and the "faulty digestion" schools may claim these cases. If sensitisation by foods (eggs, chocolate, fruits, etc.) sets up itching, as often happens, subsequent scratching may lead to infection by dandruff cocci, and so eczema be caused apparently by the foodstuffs. In any case it is quite tenable that organisms, as Unna suggested, are the exciting cause of by far the majority, if not in all cases of eczema. Even where a sudden acute

generalised attack of eczema occurs, it may be explained by the sensitisation theory, the sensitising having occurred owing to sudden rise in the toxicity of the organisms. It would be well to bear this combined theory in mind, and to bring it to bear upon such cases of eczema as we may meet with.

Any survey of present-day dermatology would be inadequate without a reference to actinotherapy.

During these thirty years we have seen the rise of the Röntgen rays, and it was early that their use was discovered in the treatment of skin disease. The first observation of the action of these rays upon the skin was the accidental burns which were produced with too long exposures in taking radiographs. It was then found that there was some selective action upon young and actively dividing cells, and this action was found to destroy malignant cells while leaving the normal cells unharmed. Unfortunately, the press started an unwarranted boom of the X-rays as the cure of cancer. This of course was not claimed by the medical profession, for it was realised that as the action of light varies inversely with the square of the distance, it is impossible to bring under the effective action of the rays parts which are remote from the tube without giving an overdose to parts which are nearer.

Even with better methods of measurement of dosage, with screens and " cross-fire " and the greatly improved tubes, I doubt if anyone will be found who holds too optimistic a view as to the hopes of the indiscriminate cure of cancer by this method. But locally on the surface the X-rays have added considerably to our powers of healing or controlling various dermatoses.

It should be remembered that all actinic rays have the power of " ionizing " the cells. That is, they liberate electrons from the atoms. After the discharge

of an electron the atom becomes electrically charged, and according to Sir Oliver Lodge, "it is no longer neutral or inert, it is actively and chemically fierce: it is no longer satisfied, it seeks to combine with another." This serves to explain any bactericidal power and the chemical and physiological activities of light.

At first X-rays were utilised for the treatment of cutaneous carcinomata, lupus vulgaris and erythematosus, nævi and tinea.

Acting upon the experimental work done on the development of ova, where it was found that a minimal exposure to rays increased mitosis and growth of cells generally, and that beyond this minimal dose growth was inhibited or even arrested, it was sought to bring into action an optimum dose of rays which would destroy the cells of more embryonic type, while leaving the normal tissue cells unharmed.

In early cases of skin carcinomata this has been achieved, but as in so many cases there are always disadvantages as well as advantages.

Where extension has taken place into cartilage or bone the rays seem to be powerless. Too frequent doses of rays may induce a condition which is termed X-ray hardening, where no further reaction of the skin cells can be expected. Also each case has to be watched most carefully for recurrence, as in other methods of treatment. With regard to this, I am not at all sure that some of these so-called recurrences are due always to insufficient treatment. There is some reason for supposing that the tendency to malignant changes which originated the tumour is not lost entirely in the skin cells when the original ulcer has completely scarred. However, even with these defects, X-rays and radium, rightly used, may be regarded as the

treatment for rodent ulcers and early skin carcinomata which offers the best prospect of relief with the best cosmetic effect.

With regard to lupus vulgaris, however, it must be frankly admitted that the field of usefulness of the X-rays has contracted considerably. X-rays *will* cure lupus, but the after experience of cases which have had long and frequent exposures shows a disastrous increase in the numbers of carcinomata developing upon the scars. Carcinomata are of course met with in untreated lupus of long standing, but the numbers have increased so much since the rays have been in use, that this treatment in most hands is now used only for the reduction of exuberant masses and the healing of ulcers, in which the results are brilliant. The deep-seated nodules can be treated by other methods which are more rapid, such as by the new selective caustic pyotropin.[2]

The length and number of exposures necessary for the destruction of nævi have made it unsafe to use X-rays in the treatment of these.

With regard to the treatment of tinea tonsurans, however, it may be claimed that the experience of the past twenty years has shown that we have in X-rays a rapid cure of this distressing and persistent complaint. Since this method has been used for school children by the Education Authority the incidence of the disease has been reduced to almost negligible proportions. There are possible accidents to be met with in this treatment. Cases of permanent alopecia were more common earlier on than they are now. Some of these may possibly have been due to some peculiar idiosyncrasy, others to too active antiseptic treatment used in addition to the raying, while others may have been due to faulty technique; but even with some of

these alopecia cases the hair has been restored after a period, even after as long as five years.

It is essential that the treatment be undertaken by a medical man of experience, and that the dosage be timed with great accuracy. It is also wise to have one machine specially tuned for this work and kept exclusively for ringworm cases. With these conditions it may well be that the "small spored" ringworm, which has proved such an economic disaster to schools, may soon be a rarity or perhaps completely stamped out.

Not only have X-rays proved of service in rodent ulcers, tuberculides and tinea tonsurans, but they are of great service in itching, scarring and suppurative diseases. Taking advantage of the fact that after a sufficient dose of rays the nerve-endings are anæsthetised for a period, one has been able to give a temporary relief to cases of anal and vulvar pruritus, to areas of lichenification, to chronic eczema, and lichen planus, and at times this temporary relief has been followed by a cure of the condition.

X-rays have a peculiar effect upon scar tissue, in rendering it more elastic and atrophic. So that where bands of scar are interfering with the free movement of limbs and natural orifices these can be rendered more supple. For instance, I have had a small child under my care who had her mouth so reduced in size by a scald, that movement of the jaws was prevented, and food had to be pushed into her mouth by means of a pencil. After raying the mouth became quite flexible and expansible. Expression returned and mastication became possible once more.

In hypertrophic scars and even fibromata, provided the cases are treated early enough, atrophy can be induced and deformity corrected. But the most dramatic results are seen with true keloid. Here the

whole condition can be arrested and the masses reduced to flat, white or slightly pigmented scars. Even in sclerodermia some atrophy may be induced.

In suppuration it has been observed that limitation of the area, more rapid pointing of the abscess, and relief of pain may be the after-effect of X-raying. This can be taken advantage of in boils and carbuncles, but in acne pustulata the best results may be seen. The rays have the power of arresting and diminishing glandular activity, so that in acne, not only do the pustules discharge rapidly and dry up, but the comedones are shed and the grease-glands dried up, so that a cure may be obtained from this method of treatment alone. When also hypertrophic and keloidal scars are reduced, the best cosmetic effects are seen to result from this treatment.

The rays have also been used for hyperidrosis with good effect.

Although the tale of usefulness of the rays has not been exhausted, enough has been said to show the advance which has been made in dermatology by means of the X-rays. And what is true of X-rays is also true of radium, and to some extent to light.

With the improvement in the lamps, more advantage has been taken of the action of ultra-violet and other rays in the treatment of skin conditions. It has been held that light is bactericidal directly, and indirectly through the action of leucocytosis, that it increases metabolism and the absorption of calcium and phosphorus, that it increases hæmoglobin and promotes the activity of the endocrine glands, especially the thyroid and adrenals, and that it counteracts the effects of anaphylaxis.[3] This, with the ionising power alluded to above, explains why light proves of service in a number of widely-differing dermatoses.

It has been used continuously since its introduction by Finsen in 1897 for lupus, and it still remains the best treatment for this complaint, where time and money are of no object.

Much more stress is now laid, however, on the general treatment of the whole body by light than merely the local application to the diseased areas themselves. And in practice it is assisted by local caustic methods, such as the pyotropin mentioned above. All forms of tuberculosis of the skin are now being treated by this general light bath method, as of course are other tuberculous affections.

To mention one other disease which is often amenable to light treatment, I would cite alopecia. Here cases of widely differing causation will sometimes respond to the nutritional stimulus of the light.

But I have tired you too much already for me to enumerate all the conditions which light may benefit. Nor have I time to allude to CO_2 snow treatment of nævi, the thallium treatment of ringworm, etc. But I hope that this brief summary of a few of the advances in dermatology may have interested you, and shown at least that the subject has not been allowed to remain stagnant, but that in it as large strides have been made as in other branches of medicine.

REFERENCES.

[1] *Anaphylaxis and Sensitisation.*

[2] An alkaline phenol compound (see Beatty, *Brit. M. J.*, Jan. 14th, 1928).

[3] Bryce, *Brit. M. J.*, March 19th, 1927.

THE LONG FOX MEMORIAL LECTURE:

DELIVERED IN THE UNIVERSITY OF BRISTOL ON NOVEMBER 29TH, 1927.

THE VICE-CHANCELLOR (Mr. T. LOVEDAY, M.A.) *in the Chair.*

BY

HENRY DEVINE, O.B.E., M.D., B.S., F.R.C.P.,

Medical Superintendent of Holloway Sanatorium, Virginia Water, Surrey;

ON

THE REALITY OF DELUSIONS.

MY first duty is to thank those who have invited me to deliver this the sixteenth Long Fox Memorial Lecture. I am unable to conceive of any greater honour which could be conferred upon one who was educated at the Bristol Medical School than that of being deemed worthy, by those who were his teachers and fellow-students, to give the address in which that great and good Bristol physician, Edward Long Fox, is annually commemorated.

I have selected "Delusions" as the subject of this lecture for two reasons. The first is as follows: delusions being the most prominent, frequent and characteristic symptoms in the psychoses, it is evident that the more insight we gain in respect of their origin and significance the nearer shall we be to solving the obscure and elusive problems of mental illness. The second reason is a personal one. During a period of some twenty years spent in almost daily contact with

psychotic patients I have always been particularly interested in the strange ideas to which many of these patients give utterance and to which they adhere so tenaciously. Furthermore, with a view to discovering the why and wherefore of the delusions expressed, I have from time to time made studies of individual cases, recording as far as possible what they said and did during a period of several months. I therefore felt it suitable on such an occasion as this to choose as the topic for consideration one which had been made the subject of personal study, even though I was only too conscious of the fact that I had no very striking or original views to impart.

At the outset it would appear desirable to define a delusion, seeing that this is the subject of discourse. When an attempt is made to do so, however, many difficulties are encountered. An hallucination, which is a morbid symptom closely allied to a delusion, may be defined more readily. It is a perception without an object: a voice is heard when no one speaks, something is seen where nothing is. A delusion has been described as a false conception and persistent belief, unconquerable by reason, of what has no existence in fact. Now, while this definition is more or less adequate from the purely external point of view, it is inadequate from the point of view of psychiatry, as the delusions of the insane are assuredly based upon realities—realities the nature of which it must be the chief aim of the psychiatrist to discover. It does not necessarily follow, however, that because a belief is irrational and absurd it should be included in the category of delusions, because many persons who are regarded as normal, and who, indeed, are normal, entertain beliefs which to others appear

totally incredible and unreasonable. It would thus appear well to renounce any attempt at defining a delusion, especially as this term can be used to convey a variety of meanings. Instead then of indulging in a meticulous discussion on the significance of a word, we may perhaps reach the essentials of our subject more quickly by utilising a delusion exhibited in a concrete case as a paradigm of delusions in general.

A man, aged 39, shortly after his marriage, developed a severe anxiety state. Though insisting he was quite well, he walked about in a state of restless agitation, picked himself, and could not concentrate. After a time the curious delusion emerged that he had the gift of flight, and this delusion has persisted ever since. At the present time his general intelligence and memory are perfectly normal, and he is able to converse sensibly, and even amusingly, upon any subject within the range of his knowledge and experience. He never seems really interested in a conversation, however, and he gives the impression that he finds it rather a nuisance, and has more important and pressing matters awaiting attention. The moment the conversation flags, the patient will mutter to himself, curse himself for a fool, and exhibit a number of jerky movements which betray an obvious difficulty in sitting still. He is a solitary man, and likes to hide away in some quiet spot, where he is free to indulge in a number of strange antics without the restraint or hindrance which the society of others imposes. He poises himself for flight, inflates his chest, makes all kinds of hissing noises, and persistently reproaches himself for failing to soar into the air. He dislikes talking about his delusions, and politely but firmly turns the conversation into other channels when

the subject is introduced. I have spent many fruitless hours trying to penetrate below the surface. Often the patient shuts up like an oyster, and the usual responses when he consents to refer to his delusion consist of fragmentary and jerky sentences hissed out between his teeth. A typical instance is as follows: "I could do it if I tried—it *is* possible—I 'd better do it too—it comes from the brain—I could do it with my brain—my whole body will go through the air—it 's the only thing worth living for—I am a fool—why don't I do it?—it 's the only possible thing to do—I must be a man and do it."

Here then is a man who is impelled by a remorseless and persistent force within him to carry out a preposterously impossible task. Apart from his delusion he is an intelligent man, clear in his mind and free from confusion. It is true that he exhibits emotional indifference to matters which most people regard as important and interesting. Thus he is indifferent to the fact that he is in an asylum; he has no desire to return home; and he shuns social contacts. But this apparent affective apathy is due to the fact that he has only one thing to live for; all his energy is absorbed in a futile task, and he just wishes to be left alone in order to carry out his life work. All he knows is that he can fly if he makes sufficient effort, and that is what he wants to do.

As regards its actual content, there is nothing unique in the delusion of this patient. The human being has nourished the phantasy of flying throughout all ages. As Ricklin has pointed out, it appears repeatedly in the form of a wish-fulfilment in fairy stories. In these the wish to be able to fly is met by cloaks and enchanted birds as a means of transport; by a little bed with

which one may be carried everywhere one wishes; or one is changed directly into a bird. Then it is a frequent theme in what Freud calls "typical dreams," by which is meant dreams in which almost everyone has dreamt in the same manner. Finally, it may be pointed out that some persons believe as part of their spiritualistic doctrine that, under certain conditions, not only may certain bodies move in the air without support, but that even the medium himself may be capable of floating in space under the influence of spiritual forces (levitation).

Now though we may regard as erroneous the belief that an individual infused with supernatural power may become so buoyant as to float in the air, we should assuredly not take the view that such a believer was, on account of his belief, suffering from a psychosis, any more than we should regard the superstitions of primitive races as evidence of abnormality. The (to us) fantastic beliefs of the native we recognise as normal for him, because we know that they are really not his own; they have not evolved from his own psyche, but are collective beliefs, and are part and parcel of his social heritage. Similarly with the belief in levitation: this is no more than one element of a widely accepted doctrinal complex which has many points of contact with religious beliefs generally. Thus while we may profoundly disagree with its tenets, they are invested with an atmosphere of familiarity, and for this reason, should they come under discussion, we feel at home with our subject, and are able to discover common grounds of agreement such as are essential in any disputations. We understand the language in which these beliefs are expressed; we recognise that they include concepts somewhat akin to those to which we ourselves may give

our adherence ; we make concessions, and go as far as to admit that " there may be forces of which we have at present but little inkling," and perhaps allow that " there may be something in telepathy " ; and then maybe, feeling perhaps that we have conceded too much, we may proceed to enlarge upon collective hypnotism, the fallibility of human evidence, mediums who are known to have indulged in trickery, and so on.

The point I wish to emphasise is that such beliefs as those are no more than variants of beliefs common to all people and all times. The individual acquires them from his social *milieu.* The notion of individuality on which we are liable to pride ourselves is, indeed, largely an illusion. Our language, concepts, beliefs, our behaviour, patterns, tastes, opinions, and even our feelings, which are largely conventionalised, are derived from our social environment. The difference between individuals are infinite in their variety, but these differences are fundamental and unconscious ; they do not depend so much upon variations in opinions and beliefs, but upon natural abilities and temperament. Briefly, they are determined by organic factors which are inherent, and not upon the accidents of environment. Every parent and educationist knows that there is some intangible and indefinable factor at work in a child which exerts a constant influence upon its reaction to experience—a factor which education and training are powerless to alter.

These few observations enable a contrast to be drawn between the irrational beliefs of normal persons and the delusions of the insane. In the case described the delusion is clearly an irrelevant intrusion into the psychic life. It bears no relation to pre-existing beliefs,

to personal interests, or to problems upon which the patient may have pondered. He will not so much as lift his head to observe an aeroplane, and it is evident that no connection exists in his mind between *that* flying and *his* flying. The delusion is inspired from within, and not suggested from without, and it clearly belongs to an altogether different category of belief than one derived from the social *milieu*. In his fascinating chapter on the perception of reality William James wrote as follows: "Each thinker . . . has dominant habits of attention; and these practically elect from among the various worlds some to be for him the world of ultimate realities. From this world's objects he does not appeal. Whatever positively contradicts them must go into another world or die. The horse, *e.g.*, may have wings to its heart's content, so long as it does not pretend to be the real world's horse—*that* horse is absolutely wingless. For most men . . . the 'things of sense' hold this prerogative position, and are the absolutely real world's nucleus. Other things, to be sure, may be real for this man or for that—things of science, abstract moral relations, things of Christian theology, or what not. But even for the special man, these things are real with a less real reality than that of the things of sense. They are taken less seriously; and the very utmost that can be said for anyone's belief in them is that it is as strong as his 'belief in his own senses.'"

In the deluded psychotic there may actually be a definite reversal of James' "reality formula," so that the external world which impinges upon his senses becomes for the patient a less real reality than the delusion to which he adheres. In every case the insane

belief has a reality-value at least equal to that of the material world around him. One immediately feels this in conversing with a patient. His attitude is quite different to that of a normal person in relation to (say) his religious beliefs, for however sincerely these may be believed in, it is at least recognised that their validity may be open to question. Moments of doubt are also apt to arise, when such beliefs need to be reinforced by acts of faith. It is otherwise with the deluded person; he does not merely believe—he *knows*, just as we know that an object before our eyes has a real existence. The reason for this is not far to seek; the delusion is the outward and visible sign of an inward reality—the symbolic expression of endogenous or organic disturbances. The delusion thus differs from superstitions or erroneous beliefs in that it does not originate from the social *milieu*, but from the organism itself; it is invested with the same "reality-feeling" as perceptions stimulated from without, because it is itself an intuitive perception of organic stimulations from within.

At this juncture it is necessary to point out that the living organism is not quite the same thing to the psychiatrist as it is to the general physician. The latter, as such, is concerned only with disorders of the physiological functions, whereas the latter is concerned with disturbances of behaviour, that is to say with disturbances of the reaction of the organism as a whole to the environment. Now a complete knowledge of the physiological state of the organism of an individual is insufficient in itself to account for his behaviour at any given moment. This is determined by a complex of mutually interrelated factors, amongst which are his physical state at the time, the whole of his past

experience, his personality-type, and his ancestral history. All these factors play their part in the reaction of an individual, whether abnormal or normal, to life. Thus the organism to the psychiatrist is not merely a physical organism, it is an organism " impregnated with psychism "—one in which both the individual and racial experiences exert an active influence at every moment. As White observes, we must consider the individual as possessed of an unconscious which contains the psychic precipitate of millions of years of experience (mneme), as the body contains that experience laid down in structure. With this brief digression we will return to the problem of delusions.

I must now refer to a highly-important clinical characteristic exhibited by the delusional psychotic, this being that he is quite unconscious of the source of his delusion. Though we know that his morbid thoughts and feelings are the conscious symbols of disturbances in his organic life, the patient is quite ignorant of this fact, and he would strenuously combat any such suggestion. There is in this respect a marked difference in the attitude of a patient towards physical and mental illness respectively. Both types of malady are the expression of disturbances of the organism; but in the one case the patient realises he is ill and can more or less localise and describe his sufferings, while in the other, in most instances, the patient has no sense of illness, and he is unable to furnish any information as to the nature or locality of the stimuli responsible for the morbid psychic products which surge into his conscious life. Thus the morbid state of the organism is not represented in the mind of the patient as physical suffering, but as depression, unappeasable anxiety, a

feeling of guilt, delusions of omnipotence or persecution, or in the form of visual, auditory, or conæsthetic hallucinations. This is clearly seen in the case cited above. The patient does not feel himself to be physically ill; on the contrary, he believes himself to be the possessor of a unique gift—the gift of omnipotence, indeed, since at the back of the delusion of flying are two other beliefs, the first being that he is the only man who will ever be able to fly, and the second, that when he succeeds in so doing he will be endowed with universal knowledge.

What then is really wrong with the organism in these chronic delusional patients? In regard to this matter, the psychiatrist, it must be confessed, is somewhat in the same position as his patient, for he also is unable to localise the seat of the malady, and a most exhaustive physical examination is often entirely negative. The body of the patient appears normal, and he often lives to a ripe old age. Formerly it was supposed that the secrets of disordered personality could be discovered by researches confined to the brain, but the clinical characteristics of many chronic delusional cases do not suggest the existence of structural lesions in the cerebral cortex, such as are discoverable in general paralysis in its advanced stages or senile dementia. In many of these deluded patients the memory and general intelligence are unaffected, even though they may nourish fantastic delusions and exhibit extreme abnormalities of conduct. Thus a patient, who had been for several years inaccessible, negativistic and mute, suddenly began to write poetry, in which she gave a detailed account of the happenings in her ward during the years of her illness. The accuracy of her

memory and the keenness of her perception were nothing short of remarkable. Thus it is not the intellect or judgment which are primarily responsible for delusional states, and most psychiatrists now recognise that these have an emotional rather than an intellectual basis. Behind the thinking, logical being, whose development coincides with the development of the neuro-cerebral apparatus, there exists a non-logical, affective being which, as Hesnard says, is a psychic expansion of the life of tropisms, reflexes, and organic tendencies, themselves the basis of instinct. It is from disturbances of this organic-instinctive life that delusions appear to originate.

I have suggested elsewhere that thee volution of a delusion is often similar in nature to the unfolding of an instinct. Clear examples of pure instinct are observed in activities concerned with reproduction and the rearing of the young. Birds mate, build a nest, lay eggs, sit on the eggs, feed their young, and care for them as long as is necessary. An impulse from within impels the bird to perform this series of extremely complex reactions, though it can obviously have no knowledge of why it is behaving thus, or any prevision of the ends to be attained. The development of the delusion in our patient closely resembles the birth of an instinct in animals. At first he experienced a sense of anxiety, discomfort and tension—the consciousness of changes in the organic life for which he was unable to account. Then the delusion crystallised out, and he became infused with a new sense of power and purpose as if he had made a great discovery. He made no attempt to justify his belief; it was an "*a priori* synthesis of the most perfect sort," and any suggestions

casting doubt upon the reality of his unique and ineffable gift were to him as mere flippancies. Like an instinctive craving a delusion develops, wells up, or emerges of itself, and the patient himself is powerless to prevent what is taking place. The delusion unfolds itself; it is "hatched-out" of the organism, as it were.

The content of a psychosis often reveals the existence of a disturbance in the instinctive life of the organism. Thus visual, auditory and conæsthetic hallucinations more often than not have a definitely sexual colouring. As an instance may be cited the case of a patient who, having served the State and led a life of high endeavour, after a period in which he imagined himself to be the victim of blackmail, becomes haunted by visual hallucinations of a grossly homosexual type; and then a formless black figure materialises and follows him wherever he goes. Then we know how closely connected is the development of the psychoses, with the ripening or decay of the sexual life, or with betrothals, marriage and childbirth. In other cases the origin and significance of the delusion are veiled in obscurity. The delusion of flying is a case in point. That sexual components enter into its causation I do not doubt, but I have always felt reluctant to give a strictly sexual interpretation to a symbol unless the relationship was quite evident. Let us therefore here content ourselves by saying that to the patient (for undiscovered reasons) it represented a feeling of omnipotence with which his ego had become inflated.

Since a study of the psychology of the biogenetic psychoses suggests that their symptomatology is the outcome of disturbances in the organic instinctive life,

it is not to be expected that the psychiatrist will be able to localise the seat of these maladies in any single organ, not even the nervous system, or to describe the exact nature of the physiological changes which may be presumed to be taking place. Furthermore, I feel very doubtful if the delusions and hallucinations of the insane can be psychologically localised as Freud has endeavoured to do. We know that the delusions of the schizophrenic alway range with persistence around the region of the genital organs, but, as Kretschmer observes, we must neither separate the total affectivity from the sexual impulse, nor account for it entirely in terms of the sexual impulse.

In an interesting monograph upon the psycho-physiology of hunger Turro points out that the feeling of hunger or thirst has for its cause the impoverishment of the internal *milieu*, and in consequence the distress of the cells of the organism. The internal *milieu* is not an inexhaustible storehouse; its supplies have to be continually renewed, and the time arrives when either the quality or the quantity of the internal resources is insufficient to supply the cellular avidities. It is then that what we call hunger is consciously felt. There is here a difference between vegetable and animal behaviour. In the former the conative impulses or strivings—here mainly concerned with assimilating the chemical material necessary for the metabolism of vital existence—do not take the form of seeking movements in relation to the environment, but, as Briffault well puts it, "of a continuous appetence continuously satisfied." The plant bathes in its food, it does not search for it and procure it. It is otherwise in animal life. A moment occurs when its organism can no more

of itself supply the internal *milieu* with what is necessary to nourish its cells ; the unique means then of repairing the deficit is to seek for and to reincorporate within itself the elements which it lacks. " At this stage," to quote Turro, " this psychic tendency, which impels to seek without what is lacking within, is what constitutes the sensation of hunger—an echo of physiological distress, and at the same time the dawn of psychic life."

The bio-psychic processes involved in delusional formation bear a close resemblance to those occurring in the awakening of hunger. Just as hunger is the echo of normal physiological distress, so a delusion is the echo of morbid physiological distress—the symbol of diffuse and unlocalisable changes occurring in the depths of the organic life. Hunger does not originate in the brain, but in the depleted cells of the whole organism. It is thus, also, with a delusion ; it is the conscious symbol of a morbid state of functioning of the whole organism. As Mott, whose conclusions were based upon exhaustive researches on the pathology of dementia præcox, suggested, there is probably a hypofunction of the whole of the bodily tissues, specially of the reproductive and endocrine systems and associated with deficient oxidation processes. I would like to refer also to the important investigations carried out by Miss Robertson under the direction of Dr. Golla at the Maudsley Hospital on the vaso-motor reactions in mental disorder, with special reference to hæmoclastic crisis. This crisis is characterised by leucopenia, fall of blood-pressure, inversion of the leucocytic formula, hypercoagulability of the blood, and diminution of the refractive index of the serum. To

demonstrate the presence of the hæmoclastic crisis, 200 grm. of milk are administered to a subject who has fasted for several hours. The leucocytes and differential leucocytes and blood-pressure are noted before the meal is taken, and again at intervals of twenty minutes afterwards. In the normal subject the blood-pressure either remains unaltered or tends to rise. The findings of this research need not be here detailed. For the present purpose it suffices to note that the hæmoclastic crisis occurred in 94 per cent. of dementia præcox patients, in 85 per cent. of melancholias, and in 75 per cent. of chronic mania cases.

Thus associated with the mental disturbances of these patients are disturbances in their organic life. As in the case of hunger, the total reality is not revealed by exclusive reference to either the unconscious biological or the conscious psychological processes. The total reality is a bio-psychic process. We are dealing with the organism as a unity, one and indivisible. It is thus with a psychosis, where we have a morbid state of the organism overtly manifested by a morbid state of mind. As to the causes of this endogenous morbidity, various opinions have been expressed. I recently had the advantage of a conversation with a distinguished continental psycho-analyst, who expressed the view that dementia præcox might, with further knowledge and investigation, prove to be psychogenetic in origin. I take it that the psychogenetic theory in pure form means that a normally constituted individual might be so inhibited from direct or sublimated expression of his sexual cravings (life-force) by defects in his upbringing and life situations, that these cravings eventually find an outlet in consciousness in the form

of delusions and hallucinations. I wish most sincerely that I could accept such a view ; if it covered the facts it is evident that measures might be taken along educational lines which should do much to diminish the incidence of insanity in the community. The psychogenetic factor must, of course, not be ignored in considering the pathogenesis of the biogenetic psychoses. Since the past experience of an individual exerts an active influence upon his present behaviour, it is clear that we cannot exclude the environment as a factor in the production of the psychoses. If the forces of life are pent-up by an environment affording them an inadequate outlet, a chronic state of bio-psychic tension may result—a state of neuro-vegetative and humoral disequilibrium on the one hand, and of emotional disquietude on the other. There can be but little doubt that neuroses may be thus created or that these can be cured by psycho-analytic or other psycho-therapeutic measures. As regards the biogenetic psychoses, however, I cannot but feel that, in respect to causation, the accent must be placed upon the organic rather than upon the psychogenetic factor. The subject of dementia præcox is not so much the victim of external circumstances as he is of an inadequate bio-psychic (organic-instinctive) constitution. To put the matter crudely, in the psychoses the abnormal psychic manifestations appear to be the expression of *diseased* instincts, rather than, as purely psychogenetic theories would seem to imply, of *distorted* instincts. Personally I believe that the divergence of opinion between the psychogenetic and the biogenetic schools of thought is a purely artificial one. It is not a question of whether a given abnormal mental state is

due to the external pressure of life or to an organic disease, but rather a question as to *how much* it is due to one or the other.

In the normal person the rhythm of his organic life goes on in the silence of the unconscious; at the most it constitutes a dim background to clear consciousness. At times, of course, physiological needs attract attention, but it is essentially in disease that organic processes become insistently articulate. Thus in pneumonia, for instance, the patient becomes painfully aware of the fact that all is not right with his organism. A similar state of affairs obtains in the psychoses, where organic disturbances become articulate in the form of delusions and hallucinations. The patient becomes conscious of what should be unconscious, namely, the functioning of his own organic being. The majority of these manic-depressive or schizophrenic patients are endowed with a constitutional blemish of their bio-psychic equilibrium. In spite of viscera usually normal, and a physique often, but by no means always, normal, in spite, also, of an intelligence sometimes above the average, they are unhappily the victims of an organic life, anarchical and imperious, the generator of powerful and inco-ordinated emotional tendencies. Such individuals are peculiarly liable, as a result of fatigue, psychic trauma, some infection, focal sepsis (an etiological factor which has been made the subject of some interesting observations by Bristol clinicians), or the normal physiological stresses, to develop definite psychoses. The pathogenesis of the delusional development in such cases has been well described by Hesnard. The following is a brief resume of his views. Originating at the heart of the

undifferentiated organic; diffuse and unlocalisable expression of a disorder of the instinctive life—the affective urge of the psychopathies is not transmitted to the psychic organ by the ordinary physiological route of general (conæsthetic) sensation, as are at least partially the organic appetites, but by different and extremely diffuse paths which represent the roots of this organ in the organic life. These are not made to admit the conscious symbols of sensation, but only of "feeling." In consequence of this, the affective urge is experienced, not as an illness or a pain, but as euphoria, anxiety, excitement or depression, which effects are quickly symbolised into objective imagery. Thus a psychotic is suffering from a malady of a particular kind. His illness changes so intimately, and in a manner so diffuse, those organic functions upon which the integrity of his personality depends, that in place of perceiving his true malady he perceives only a sense of power, a strange being within him, or an image (hallucination) which he localises outside himself.

This formulation appears to cover the facts. Many years' clinical experience has led me to the view that, in their ultimate analysis, the psychoses are no more than obscure forms of organic, though not necessarily incurable, disease. Not infrequently we have the happiness of observing the delusions of our patients melt away, so that complete recovery ensues. When this happens, we may suppose that a bio-psychic adjustment occurs, similar to that occurring in (say) pneumonia, where the psychic manifestations of pain and distress melt away as the pulmonary disorder subsides. Such a view is not necessarily antagonistic to a psychological theory of causation. The two are complementary rather

than contradictory; they envisage different aspects of the same reality. I would point out the following, however: the study of the instinctive behaviour of animals deprived of food has been responsible for important additions to our psychological knowledge; from the strictly practical point of view, however, we know that the disturbance in their behaviour can only be cured by supplying their organism with what it lacks. It may be that here we have a hint as to the kind of treatment which may some day prove to be the most effective in the cure of the constitutional psychoses. We have the example of myxœdematous insanity upon which to reflect, and from which to gain encouragement for unremitting research.

From what has been said, it is evident that when a patient expresses some grotesque delusion, he is, in a sense, asserting what is true. He has, indeed, more right on his side than has one who would persuade him to the contrary, for his delusion is but the symbol of organic actualities. There is a morbid stir in the organism which stimulates into activity latent instinctive tendencies, and also, as Storch has shown, archaic modes of thought which lie deeply buried in the organic unconscious. Delusional thought is "organic" thought which evolves like a dream, unhampered by the cramping influence of external reality and the laws of time and space. As Blondel observes, "The morbid consciousness expresses itself outside the laws of social consciousness by mental processes, not only pre-rational, but pre-normal, which reveal the *individuel pur*." French psychiatrists apply the term *aliéné* to the psychotic patient, and as regards his delusions he is definitely alienated from social life.

In so far as the social consciousness of our patients remains intact, we may share their joys and sorrows, and they ours; but in respect to their delusions, we can have no mutual spiritual communion. Something altogether unique is created in a psychosis; the mind is invaded by morbid mental growths which are unanalysable, primordial, and, to the normal mind, incomprehensible. A delusion is a strictly individual psychic product, and often the only elements in it which are derived from the social *milieu* of the patient are the language symbols he employs in the vain endeavour to make himself understood.

PROBLEMS IN THE TREATMENT OF HÆMOPTYSIS.

BY

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IT must be taken as an axiom that two conditions are necessary for the occurrence of hæmoptysis. In the first place, there must be the rupture of a blood-vessel; secondly, the ruptured vessel must burst into some part of the bronchial tree. The passage of red blood corpuscles by diapedesis through the capillaries of congested lung tissue in pneumonia gives rise to blood-stained sputum, but not to true hæmoptysis. The tuberculous process in its earliest beginnings is a proliferative one, filling, or replacing, completely the tissues in which it arises, and there is, moreover, a marked tendency for the early tubercle to obliterate blood-vessels as it advances. At this stage the tissues are closely packed with the products of the tuberculous process. There is no space into which the congested pulmonary vessels can bleed to any serious extent. An initial hæmoptysis occurring at this stage can never be great in amount, and while it may be of the highest importance diagnostically, it presents little or no danger to the patient. True initial hæmoptysis rarely exceeds one or two drachms in amount.

As the tuberculous process advances and caseation occurs, sooner or later some degree of liquefaction

of the caseous material begins, and the products of disintegration are coughed up, leaving a cavity which may be extremely small, but, nevertheless, the conditions necessary for a more extensive hæmoptysis are now established. A cavity must be in direct communication with the airway of the bronchial tree. The tuberculous focus is now no longer tightly packed, and if a vessel is eroded free bleeding may occur. It is a reasonable inference to make that any hæmoptysis of half an ounce, or more, probably comes from a cavity, although the latter may be much too small to be recognised by ordinary physical examination. The moment that one encounters an hæmoptysis of an ounce or more, the problem of treatment becomes all-important, because there is the likelihood of the blood being aspirated to other parts of the lung, with a corresponding spread of infection, and it must be the common experience of medical men that hæmoptysis is frequently followed by a period of fever, and not infrequently by an extension of physical signs of disease.

A third and very serious type of hæmoptysis, which is a source of great anxiety to all concerned, is one which tends to recur every few days. The problem here is one of secondary infection by septic organisms, and differs in no way from that of secondary hemorrhage in surgical conditions, except that the bleeding vessel is not accessible.

Lastly, there is the fulminating type of hemorrhage which results from the rupture of a pulmonary aneurysm, in which the patient may either bleed to death straight away, or be asphyxiated by his own blood. Fortunately, instances of this are comparatively rare and, from the point of view of treatment, have no great importance, since they are usually rapidly fatal.

Having laid down this rough clinical classification

of hæmoptysis, I propose to pass on to treatment. The first class of case, exhibiting trivial initial hæmoptysis, mainly concerns us by reason of its diagnostic value. The bleeding calls for little or no special treatment, beyond the establishment of a proper regime of life. Its chief danger lies in the fact that it is liable to be unaccompanied by gross physical signs, and occasionally its true significance is overlooked. The second and third classes of cases I propose to discuss at some length.

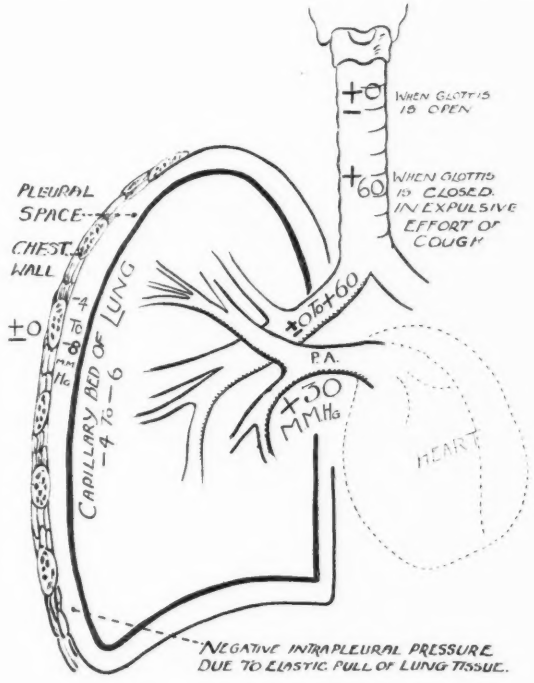
From time immemorial the administration of morphia has occupied the premier position in the practice of a large number of doctors in the treatment of hæmoptysis. The grounds for this preference may be summed up under the following headings: (1) that it allays the anxiety of patients and friends; (2) it keeps the patient quiet and allays cough, thereby preventing further bleeding. My view is that morphia given for hæmoptysis has been responsible for more harmful results than any other drug used in the treatment of this condition. Cough occurring in association with hæmoptysis, far from being a bad thing, is one of Nature's valuable therapeutic aids. When a patient is the subject of hæmoptysis of any considerable size, it is most important that he should be able to clear his air passages of the escaped blood as quickly as possible. In the absence of a good cough reflex, blood, and infected blood at that, tends to be aspirated widely throughout the diseased lung. This blood usually spreads the tuberculous process, and if the bleeding comes from a cavity heavily contaminated with septic organisms, there is, in addition, the danger of a septic broncho-pneumonia. We are all familiar with cases which date their downward career from their first considerable hæmoptysis, which has been followed

by a prolonged period of fever and signs of extension of the disease. There is usually a history of the free administration of morphia in these cases.

Those patients who are fortunate enough to escape treatment by morphia quickly clear their lungs by coughing, and little or no harm comes to them from the loss of a few ounces, or even a pint, of blood. The alleged value of morphia in allaying the apprehension of patients and friends is much overrated. If it is sensibly and quietly put to the patient that it is most important for him to get rid of the escaped blood, and that a certain amount of coughing is desirable, he ceases to worry. I know of no instruction more irksome or distressing for a patient who has blood bubbling in his bronchial tubes than to be told to inhibit his tendency to cough. Leaving out the rare tragic cases of ruptured pulmonary aneurysm, it may be laid down that all cases of hæmoptysis, even severe ones, will stop as soon as the patient has lost a moderate amount of blood, and this in spite of any form of treatment. When this stage is reached, it is all-important for the patient to get his air passages clear. The favourable results in those cases treated without morphia is reflected in the temperature chart on the days following the hæmoptysis, the majority of cases showing little or no trace of fever.

Cough in relation to Hæmoptysis.—To judge by the stress that is laid on the importance of morphia and absolute rest to restrain cough, one is bound to conclude that cough is almost universally regarded as a potent factor in the production of hæmoptysis. If this were a fact, hæmoptysis ought to be a common occurrence in elderly chronic bronchitics who cough violently, whereas our daily experience teaches us that such an event is rare. When it does occur, the bleeding is

probably from minute branches of the bronchial artery. It will be helpful to consider briefly the mechanical effects of cough upon the chest and its contents. In the first place, the lung is suspended and maintained in a condition of expansion by the negative intrathoracic pressure. This varies around the mean point of about −8 mm. Hg. This negative pressure is due to the elastic tissue in the lung. The pressure in the pulmonary



artery is about +30 mm. Hg. Between this point of highest pressure in the pulmonary circulation and the capillary bed in the lung the pressure falls rapidly, until the pressure in the capillaries is, approximately, equal to the negative intrathoracic pressure. The

pulmonary capillaries are simply held open by this negative pressure. As regards the pressure in the air passages in the lung, with the glottis open the air within the lung is under atmospheric pressure. Closure of the glottis during the expulsive stage of cough raises the intrapulmonary air pressure enormously—roughly to 50 or 80 mm. Hg., according to the violence of the expulsive effort. The effect of this is to close down the capillary bed and inhibit the blood flow through the lungs; that is to say, the lungs are exsanguinated during the expulsive effort of cough, and the flow is only re-established during the succeeding inspiratory effort. It follows, then, that the expulsive effort of cough can do nothing to promote bleeding, but serves to expel escaped blood from the air passages. If the *inspiratory* effort is restrained, and I hope to show presently that it can be, cough must be an unimportant factor in the production of hæmoptysis.

It might be urged that the danger lies in the dislodgment of blood clot, the formation of which is Nature's effort to allay bleeding. Such a view, however, I hope to show, leaves out of consideration the most important factor in the production of recurrent hæmoptysis. I think it is probably within the experience of us all that serious hæmoptysis frequently occurs in patients who are resting quietly; not infrequently it rouses them from sleep. They wake up with a fit of coughing because their air passages are choked with blood, but the bleeding has, in practically every case, preceded the cough. Actually, what has happened is this. Blood-clot, which is temporarily sealing an injured vessel, becomes disorganised by the growth of septic organisms and the bleeding is really a secondary hemorrhage, such as we are familiar with in septic surgical conditions. No amount of rest or

quiet can prevent the occurrence, and recurrence, of such bleeding. The only way to prevent these disasters, apart from the method I shall refer to presently, is to keep the air passages of the lung free of clot. Blood hanging on to the outside of an injured vessel in no way corks it. The point of attachment is, as a rule, but a slender pedicle which can be readily absorbed by the action of septic organisms. A minute clot fixed firmly in the orifice of an injured vessel is more effective to prevent hæmoptysis than a large clot attached by a minute pedicle, and obstructing the air way.

I propose now to discuss in some detail a method which, in my opinion, stands out as pre-eminently useful in preventing hæmoptysis. I refer to treatment by artificial pneumothorax. In the first place, it may be well to consider briefly how the method works in prevention of hemorrhage: (*a*) by compressing the lung, the blood supply through it is greatly curtailed; (*b*) the pulmonary veins and capillaries are no longer held open by the negative intrathoracic pressure—further, the introduction of even a small quantity of air into the pleural space is sufficient to prevent the inspiratory afflux of blood to the lungs, which, as I have already said, is the only important factor in a paroxysm of coughing to promote hæmoptysis; (*c*) cavities within the lung are compressed by a concentric squeeze, so that all distensile tension upon vessels spanning a cavity is abolished—this is important in the prevention of hemorrhage; (*d*) by pneumothorax the risk of aspiration of blood to other parts of the lung, and consequent extension of the tuberculous process, or widespread secondary infection, is prevented; (*e*) the ordinary nursing manipulations can be carried out freely without fear of further hemorrhage, the

patient may be placed on a full diet, and the patient may be encouraged to clear his air passages of secretion as freely as possible.

Practical Problems connected with the Induction of Artificial Pneumothorax.—The first problem which calls for decision is to determine from which side the hemorrhage comes. In my own experience this is seldom difficult. In any case where there has been an hæmoptysis of any considerable size the signs are not usually in doubt. After hemorrhage the sound lung exhibits exaggerated breathing. On the bleeding side, in addition to weak breath-sounds, one can nearly always elicit some coarse bubbling crepitations. In the second place, the patient is usually able to give some helpful guidance as to which side is bleeding by his own subjective sensations. Thirdly, in hospital and sanatorium cases a previous knowledge of the case and X-ray records are often helpful.

Supposing, however, that there is doubt as to which side is the source of hemorrhage. I have already emphasised the fact that it is excessive inspiratory afflux of blood to the lung which is an important mechanical factor in the facilitation of bleeding, and this is abolished by even a very moderate degree of induced artificial pneumothorax. It is, therefore, quite permissible to induce a partial bilateral pneumothorax. In dealing with a unilateral induction, one would not hesitate to introduce 600 c.c. of gas into one side of the chest. It is quite permissible, therefore, to introduce 300 c.c. into each side at the same time. This is not enough to promote a serious degree of collapse from the point of view of respiratory function. It is, however, sufficient to counterbalance the effects of deep inspiratory effort, which is a main object of the proceeding. Cases so treated, however, require careful

observation by X-rays at the first available opportunity, in order to estimate the degree of collapse present.

Treatment of Hœmoptysis by Drugs.—(*a*) Morphia, in my opinion, should have little or no place in the treatment of hæmoptysis as such. The chief use of morphia in the treatment of pulmonary tuberculosis is to allay the distress of frequent unproductive cough. This symptom, apart from the discomfort it causes the patient, is responsible for sleepless nights and continued pyrexia. While one should be very careful about administering morphia to cases with any quantity of sputum, it is frequently permissible to do so at night, and the fact that the patient has recently had slight traces of colour in the sputum I should not regard as a contra-indication for the use of some form of morphia or heroin. Morphia is, of course, particularly useful in allaying the pain of pleurisy and, by the extra rest it secures, in reducing temperature.

(*b*) Vasodilators.—One of the most useful drugs in dealing with the immediate emergency of hemorrhage is amyl nitrite. So far as I know it is not open to any objection. It does not depress the cough reflex, and I have seen hæmoptysis stopped quickly on the use of amyl nitrite, in spite of the fact that the patient has coughed freely and emptied his bronchial tubes of extravasated blood.

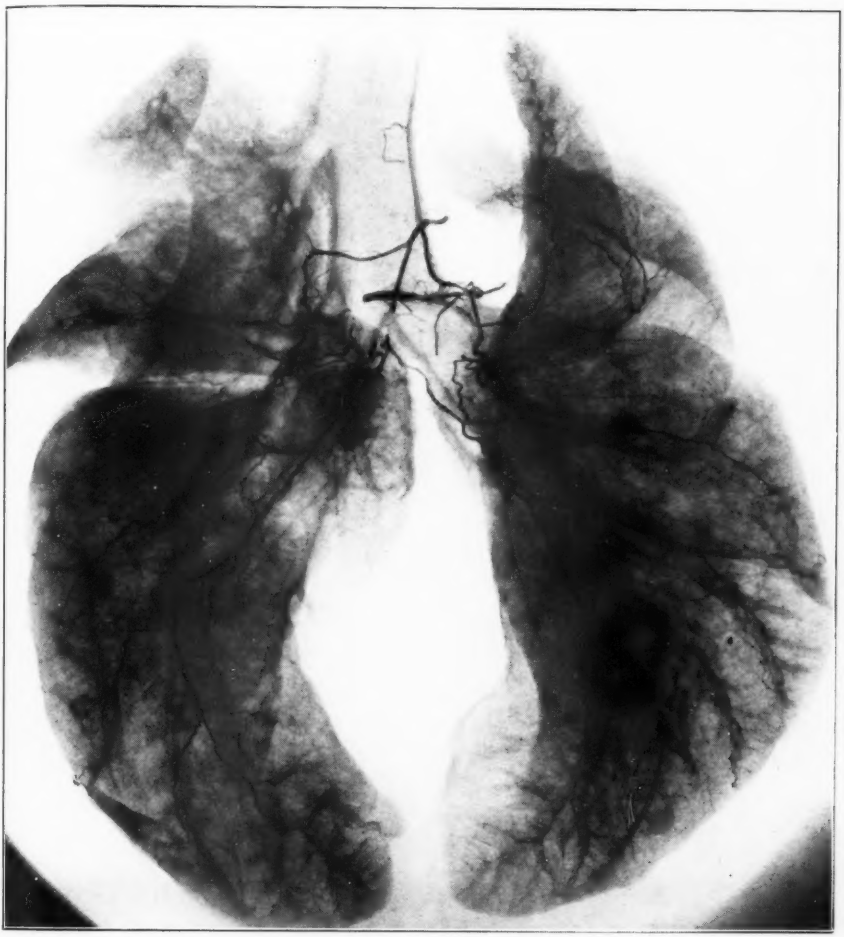
(*c*) Coagulants.—Various drugs reputed to produce rapid clotting are on the market, notably calcium salts, gelatine, and hæmoplastic sera. There is very little evidence that any of these have value. It is certainly a common experience of all of us that cases bleed over and over again in spite of the exhibition of large doses of these remedies. In the first place, there is no evidence that in the average patient suffering from hæmoptysis there is any defect in the coagulability of the blood.

This being the case, bleeding will always stop within a short time of its commencement. Most of us are familiar with the difficulty of obtaining more than, say, ten or twelve ounces of blood by venesection. It can, of course, be done; but it is not easy, and the hindrance to prolonged bleeding is blood clotting. There is no evidence that artificial coagulants produce an abnormally firm clot. With recurrent hæmoptysis, it is not a question of defective coagulability of the blood but of the disintegration of the clot by septic organisms. Formation of large quantities of extravascular clot is a disaster, rather than an advantage, after an extensive hæmoptysis. We want the blood expelled, not retained. If hæmoplastic serum is to be used at all it should be by intravenous injection; used subcutaneously it can have no value to meet an emergency of the kind under discussion.

(*d*) Mechanical Methods other than Pneumothorax.—If the principle laid down in the discussion of treatment by artificial pneumothorax is sound, viz. that one great object is to prevent excessive inspiratory movements of the lung, it stands to reason that this may be effected, though less efficiently, by firmly strapping the outside of the chest on the affected side. Strapping requires to be put on so that it well overlaps the middle line back and front, and practically the whole of the affected side of the chest must be covered with strapping. The method is, of course, only applicable when the side from which the bleeding occurs is not in any doubt, and it has the disadvantage that examination of the chest is rendered difficult and unsatisfactory.

Distribution of the Bronchial Artery in the Lung.—This is more extensive and better developed than is generally recognised, and the main course of the vessels follows that of the bronchial tubes. The accompanying

PLATE I.



Skiagram showing distribution of the bronchial artery in the pig. It will be noted that the main branches of the artery follow the course of the bronchi. The undulating appearance of the vessels is due to collapse of the lungs, and is an indication of the direction of pull of the elastic tissue in the lungs, which is longitudinal, and in the axes of the bronchial tubes.

[The bronchial artery was injected with barium by Dr. Bruce Perry, Colston Research Scholar, working in the University of Bristol Cardiac Research Centre at the Bristol General Hospital.]

plate shows a specimen of the bronchial artery injected in the pig. Cross sections show that the larger branches are situated in the peribronchial spaces. Only the smallest filaments lie subjacent to the mucous surface, and even this supply is by no means extensive. Herein, I think, lies the explanation of the extreme rarity of hæmoptysis of any size in chronic bronchitis. The positive expulsory effort of cough must raise the blood pressure of the aorta and arteries which come off from it. If the branches of the bronchial artery were distributed in relation to the inner surface of the bronchial tubes, somewhat profuse hæmoptysis would be a common symptom of chronic bronchitis, which it is not.

The symptom of the blood-streaked sputum is one which frequently calls for comment when cross-questioning a patient who comes complaining that he has spat up blood. The doctor usually makes a definite discrimination in his own judgment between true hæmoptysis and the spitting of sputum which is streaked with blood. If he obtains an answer that the sputum is merely blood-streaked it is taken as presumptive evidence against the existence of a tuberculous lesion in the lungs as a cause of the bleeding; this, however, without any clear conception of where the blood really comes from. Usually, on quite insufficient grounds, it is assumed that some ruptured vein in, or round, the pharynx is the cause of the bleeding. Streaks of blood which come up incorporated with sputum must of necessity have come from the air passages of the trachea or bronchi. Blood from the pharynx could not show this intimate admixture with sputum. Patients who are troubled by severe bouts of coughing are particularly prone to bring up blood-streaked sputum in the early morning, and it is

precisely in these people that injury to the finer filaments of the bronchial artery distributed to the mucous surface of the bronchial tubes is to be expected.

DISCUSSION.

DR. NEWMAN NEILD said that he thought the value of artificial pneumothorax was even greater than the lecturer had claimed. He agreed heartily as to the disadvantages of morphia, though this was the routine treatment advised even in the most recent books. He emphasised the importance of posture in keeping any retained blood out of the healthy lung. If death by drowning threatened, the patient should be inverted. Did Dr. Carleton feel sure that fever after a hæmoptysis was invariably from spread of disease, or was it possibly from absorption of extravasated blood ? He mentioned turpentine by the mouth as a drug of great value in these cases, though we did not know how it acted. Hæmoplastin, he thought, did not help.

RECENT EXPERIENCES OF INTUSSUSCEPTION.

BY

HUBERT CHITTY, M.S., F.R.C.S.,

Surgeon to the Bristol Royal Infirmary and Bristol Children's and Orthopædic Hospitals.

SINCE 1919 I have operated on thirty-six patients for intussusception; at the Infirmary twenty cases, at the Children's Hospital fourteen cases (since 1922), and two cases in my private practice during the same period.

Of these, two were irreducible gangrenous cases, one with a four days' history, one of thirty-six hours only. I resected the gangrenous gut in both cases, and both died. Of the thirty-four reducible cases one, a patient with an intussusception of the ileo-colic type, with a three days' history, died, the remaining thirty-three recovered. The mortality of reducible cases was, therefore, just under 3 per cent., that of all cases combined rather less than 9 per cent.

Twenty-six patients were under one year of age, the youngest one month. Five were between one and two years old. One was aged six years, and two were aged eight years. In one case the age was not specified.

Most of them were operated upon within twenty-four hours of the onset of their symptoms, earliest two

hours; but I have had recoveries after two days, three days, four days and two weeks. I shall refer to these later.

[One child had a recurrence after three months. One child who had been operated upon for hypertrophic stenosis of the pylorus was readmitted with an intussusception the day after his discharge from hospital. One was found to be suffering from tuberculous peritonitis in addition to its intussusception. In two cases reduction was achieved by rectal injections and confirmed by operation. Most of the cases showed typical histories, signs and symptoms.

It may not be amiss to run rapidly over the typical features of a text-book case. A previously healthy, breast-fed baby is suddenly seized with an acute attack of colic. It screams with pain, draws up its legs, turns pale, and frequently vomits or passes a motion. It then commonly falls asleep again, only to be awakened a short while later by a similar attack of colic. Should the bowels act a second time only blood and slime are passed. This motion does not smell offensive. Careful palpation during a peaceful interlude will generally reveal an absence of the normal resistance in the right iliac fossa. A tumour, curved in its long axis, may generally be felt. Its consistence varies, so that at one moment it is readily palpable, while at the next it may have apparently disappeared. A rise of temperature is not unusual, though in cases showing collapse it may become subnormal.

Emptiness in the right iliac fossa is due to the fact that most intussusceptions start in this region, so that very early the cæcum is turned inside out, or

rather outside in, thus causing it to disappear from its normal position, its place being taken by much less resistant small intestine.

When tucked up under the ribs, the tumour may be very difficult to detect. It hardens as a wave of peristalsis passes along it, and becomes soft as this passes away. Its shape is due to the fact that, as the gut is invaginated, it drags with it the mesentery ; hence the mesenteric border of the intussuscepted gut is shorter than its antimesenteric aspect. As the mesentery is dragged in its veins are compressed more readily than its arteries, hence the bowel becomes œdematous and its lumen occluded, while the congested mucous membrane exudes mucus and blood.

In ileo-colic cases the intussusception begins in the last few inches of the small intestine, and therefore has very soon to pass through the ileo-cæcal valve. Here it is apt to be tightly gripped. Typical signs, therefore, appear early and are very acute. When an intussusception commences in the cæcum or colon, however, a long mesocolon is found to be present, and it is possible for a considerable amount of invagination to take place into this more capacious gut before complete obstruction or even exudation of blood occurs. The diagnosis is, therefore, apt to be delayed. All the late cases in this series which ended in recovery were of this type. Cases are on record in which symptoms have been present for many weeks, in spite of which reduction has been possible and eventual recovery has taken place. On the other hand, such a child may at any time develop acute symptoms and the result may prove fatal.

I propose to give a short account of a few of the less usual cases in this series.

Peculiar site of Intussusception.

Case 1.—A child aged two years was admitted with a history of acute abdominal pain, colicky in nature, of two days' duration. During the last day blood and mucus had been passed per rectum. There was no emptiness in the right iliac fossa, but in the left iliac fossa a definite tumour could be felt. This was also readily palpable per rectum. A rectal injection was given, and the child anæsthetised, when the tumour was found to have disappeared. In spite of this, it was deemed safer to make an exploratory incision and the sigmoid flexure was pulled up into the wound. In this was found a definite ring of œdematous gut where the head of the intussusception must have existed.

Long duration of Intussusception.

Case 2.—A child of six years was admitted with a *three* days' history, typical in every respect. A tumour could be felt, both abdominally and per rectum, extending into the sigmoid flexure. In spite of the duration of symptoms, it was easily reduced, and its apex was found to be the caput cæci.

Case 3.—A child aged eight was admitted into the Bristol Royal Infirmary with the following history. Early that morning she had been seized with violent colic, which recurred several times, but had passed away by the time she was brought into hospital, and the child appeared perfectly comfortable. Neither blood nor mucus was passed. When she was examined by the resident she was found to have a temperature of 101°, and some resistance was felt beneath the upper part of the right rectus. When I came down that evening to operate on another patient I was asked to see her. She was sleeping peacefully, but I was able to feel a tumour in the right upper epigastrium. At one moment it was quite definite; at the next one doubted if it was there. Palpation caused not the slightest pain. In view of some of my previous cases, I made a diagnosis of intussusception of the chronic type, probably starting in the caput cæci. Needless to say, I was immensely pleased when my diagnosis proved correct. It was based on the occurrence of sudden colic in a healthy child associated

with a variability in the resistance of the tumour, proving it to be one of the bowel.

Case 4.—On August 27th, 1927, a baby aged thirteen months was seized with acute abdominal pain; it screamed all day long and passed several loose motions. Following this it became constipated, but aperients produced several loose actions. Vomiting and attacks of pain continued with intermissions. Eleven days later it was admitted to the Children's Hospital on the medical side. That day an enema produced a loose motion. The child vomited once. Its weight that day (September 7th) was noted to be three pounds less than it had been in the previous June. Two days later all the original symptoms recurred, and for the first time it passed blood per rectum. I was asked to see the child. The right iliac fossa was empty. In the left iliac fossa was a sausage-shaped tumour of variable consistency, and the diagnosis was perfectly obvious. I operated, and was able quite easily to reduce an intussusception, which had started at the caput cæci and had travelled round to the sigmoid flexure.

Quite a large number of cases of chronic intussusception have been published, but the condition is by no means a common one, nor is the possibility of its occurrence sufficiently widely recognised. The main features are: (1) sudden onset of very acute abdominal pain, with vomiting; (2) alternating diarrhœa and constipation, the motions sometimes containing blood; (3) rapid wasting; (4) periods of intermission of symptoms; (5) an abdominal tumour. The rapid wasting, irregularity of the bowels, occasional blood in the motions, abdominal distention, and a transverse abdominal tumour have led to the diagnosis of tuberculous peritonitis on several occasions, and in one of these the diagnosis was only established post mortem.

An ordinary intussusception has rarely to be distinguished from any other complaint except acute

enteritis and purpura. In the former the onset is less acute, and is accompanied by diarrhœa. The motions are offensive (in intussusception they are not) and fæces and blood are mixed together. No tumour is present.

In purpura the diagnosis is impossible when hemorrhage into the bowel wall has produced a tumour, unless purpuric patches are present elsewhere in the body. It is suggested if the fæces contain blood but no mucus. The age is often an unusual one for intussusception, and there is no emptiness in the right iliac fossa.

In all these cases treatment has been operative. A small incision, big enough to admit two fingers, has been made. The finger-tips have been placed at the back of the apex of the intussusception, the left hand has been placed on the abdominal wall, and between the finger-tips and the hand the intussusception has been gradually pushed back.

The last inch or two alone presents any difficulty. This often has to be pulled out of the wound in order that the œdema may be slowly and steadily squeezed out before reduction is possible. The essential thing is to be gentle and take time. The necessity for performing an enterectomy never arises in early cases. The mortality arising from it is so appalling that I have determined not to do any more primary enterectomies, but simply to pull out the gangrenous gut, drain the bowel above, and do my enterectomy a few days later, thus bringing the treatment into line with that of other late cases of intestinal obstruction.

Reduction by means of rectal injection has always

been unsatisfactory up to the present, on account of the difficulty in determining whether reduction had taken place or not. Were all cases diagnosed and treated sufficiently early, the mortality would be negligible. Sir William Taylor[1] lost three only out of a series of eighty-one cases, but the statistics of seven London and provincial hospitals[2] show that the average mortality for the five years, 1920-24, amounted to 22 per cent.

DISCUSSION.

MR. A. R. SHORT pointed out that the recent fall in mortality must be ascribed to early operation. The local incidence of intussusception was below the average. He mentioned the unwisdom of early removal of the stitches after operation. Hipsley's method of inflation of the bowel had given the lowest recorded mortality of any large series of cases.

MR. C. F. WALTERS inquired whether the presence of bile in the fæces was of definite diagnostic significance. He mentioned two cases of chronic intussusception in adults in his own experience.

MR. A. W. ADAMS suggested that radiography of an opaque enema might be of value in diagnosis, and referred to cases of undoubted intussusception that had undergone spontaneous reduction.

DR. H. ROGERS referred to the familiar predisposition to intussusception. He had seen three children in a family of four die of it.

DR. C. A. H. GEE mentioned two cases occurring in one family. Apropos of Mr. Short's warning, in both of

these the wound burst open subsequently. However, they seemed none the worse for it.

MR. DUNCAN WOOD mentioned the occurrence of three cases in one family with two deaths.

DR. NEWMAN NEILD thought that the fall in mortality was due to early diagnosis and early calling in of a surgeon. Cases were not now, as formerly, treated at first as medical.

MR. CHITTY replied.

REFERENCES

[1] *Brit. M. J.*, Nov., 1925, p. 993.
[2] *Ibid.*

Reviews of Books.

The Thomas Splint. By MEURICE SINCLAIR, C.M.G., M.B. Pp. xiv., 168. 85 illustrations and 3 charts. Oxford University Press. 1927. Price 15s.—The present short treatise gives a very good account of these methods and enables the reader to understand both the principles of treatment and the details of construction of the apparatus. Probably it is an exaggeration to say that the lessened mortality of the gun-shot fractures in the war was chiefly owing to the adoption of the Thomas Splint. It was the segregation of the cases under the care of special officers and the establishment of team work which was the great secret of improvement of results. But now that the value of Thomas's methods is generally recognised, it is of great value to have a small and clearly written book like the present giving all the technical directions necessary for their efficient application.

Fatalism or Freedom : a Biologist's Answer. By C. JUDSON HERRICK. 12mo. Pp. 106. London : Kegan Paul, Trench, Trübner. 1927. Price 2s. 6d.—Are we free to control our conduct or is our behaviour rigidly predestined and beyond our power to alter ? This perennial problem is once more attacked, this time from the standpoint of a biologist. The author first considers biological control, and says : " Every organism to some extent controls the environment in which he lives, and the pattern of this control of environment through behaviour, is shaped by the internal organisation of the individual which, in its turn, has grown up during the exercise of these distinctly vital functions." This control is at its highest in man because of his greater variety of response in behaviour, due to the more complex structure and varied function of his nervous system. Similarly the control exercised by mental processes, thoughts, feelings, volitions, etc., is an expression of the function of the highly complex and specialised brain and glandular organs of man. No scientific exposition can allow of a mystical freedom unrelated to cause and effect, but we can talk of a natural freedom related to definite causal agencies. This natural freedom means that a thing or process with specific organisation is able to exhibit the behaviour

characteristic of or typical for that organisation in an appropriate environment. This freedom must appear within the lawful system not opposed to it, its value depends on the pattern of the organisation, and the setting or total situation within which it operates. The powers of reflective thought and prevision are important factors in influencing the organisation within which the human being is free, yet his choice is none the less causally determined by the organisation of his reflexes, instincts and sentiments. We may, therefore, say that "the normal man in the normal environment is free to work out his own inner nature, and to enlarge and refine it." He has power to direct his bodily energies through different channels, and we may see that these choices are in accordance with natural law, though we may not be able at our present stage of knowledge to exactly state these laws. This concept of freedom must appeal to those who regard science as the method of approach to all the problems of life, and this little book may be confidently recommended to clarify a difficult subject. It amply maintains the high level of Psyche Miniatures on which the publishers are much to be congratulated.

The Nature of Disease, Part II. By J. E. R. McDONAGH, F.R.C.S. Pp. vi., 434. 128 figures. London: Wm. Heinemann Ltd. 1927. Price 21s.—Those who have read and appreciated Part I. of this series will welcome Part II. They will remember that in the former the thesis was announced that all disease is one; as it were, "There is no disease but Disease (and McDonagh is the exponent of Disease)." The changing aspect of disease from case to case was explained in terms of the essential humours; it is true that in place of invoking phlegm or melancholy, one was told that the protein particles of the plasma were in a molecular dispersoid state, or that the viscosity of the serum was abnormal. The main theme of the present volume is chronic intestinal intoxication, the author's views on focal sepsis being frankly those of the "autotoxis" school of the nineties. If a patient has infected tonsils, or a dental granuloma, it is intestinal sepsis that has produced this. Three hundred pages are devoted to the discussion of this subject, with some one hundred and fifty elaborate case histories. In nearly all, treatment included colon lavage and the administration of substituted symmetrical urea compounds; though since most had much other treatment, as operations, vaccines, dieting, contramine, thyroid, insulin, etc., the issue is somewhat obscured. It is distressing to read, "The patient was subjected

to every kind of treatment, and in spite of the blood picture having been brought back to a normal condition, no clinical improvement could be registered." The remainder of the book is devoted to an explanation of the action of drugs, vaccines and so forth, on a "rational" as opposed to an "empirical" basis, illustrated by means of the author's suggested electronic formulæ for over a hundred preparations. These occupy much space, some of them taking a whole page each; but the average medical reader will be moved rather to awe than to understanding. An appendix on animal experiments and a voluminous index concludes the book; but we are encouraged by the prospectus of Part III. to await its appearance with what patience we can muster.

Tonic Hardening of the Colon. By T. STACEY WILSON, M.D., F.R.C.P. Pp. xxiv., 210. London: Oxford University Press. 1927. Price 8s. 6d.—That this terrible disorder has not attracted the attention it merits is ascribed by the author to a failure to recognise its possibilities. The symptomatology is wide and varied. Cardiac, cardio-vascular and circulatory changes; respiratory irregularities and embarrassment; digestive disorders of the most diverse types, but especially those suggestive of gastric or duodenal ulcer; and, finally, every form of mental depression from slight feelings of "lowness" to suicidal impulses; may all be indicative of tonic hardening of the colon. "The term Tonic Elastic Fixation may be used for this non-plastic form of static activity as it manifests itself in the colon." On palpation, the colon is felt to harden up under the hand, and to be tender; and a very large proportion of the author's patients show this sign. Fortunately, diagnosis is comparatively easy, and treatment simple, consisting of intestinal antisepsis, antispasmodic drugs, and avoidance of constipation. So that possibly many physicians have been treating the condition for years on the symptomatology, without ever recognising the real cause of their patients' troubles. We are warned, however, that it does not follow that because the patient has this complaint he has no other; so that if failure attends our efforts to relieve we must be prepared to look farther afield, to operative measures on the one hand, or to psycho-analysis on the other. The author gives full directions for the diagnosis and treatment of the disease, with an account of the physiology and pathology of the sympathetic control of the bowel, and numerous case histories, to which reference is facilitated by an adequate index.

The Tongue and its Diseases. By DUNCAN C. L. FITZWILLIAMS, C.M.G., M.D., Ch.M., F.R.C.S. Pp. xvi., 505. Illustrated. Oxford University Press. 1927. Price 36s.—We review this book with much pleasure, for it is very creditable to the author, and is evidence of an immense amount of research into the literature and experience of the subject. He describes the normal, comparative and pathological anatomy of the tongue, and the appropriate treatment of its diseases, with abundant extracts of case-reports from numerous sources. It is destined to become a standard work of reference. The importance of cancer and its treatment necessitates a summary of his views. We agree with his objection to preliminary ligation of the lingual arteries, and he argues reasonably against removing the glands before the tongue, intratracheal anæsthesia, and the preliminary administration of morphia except in very small doses. Of diathermy, he thinks it has few advantages, and serious disadvantages over the ordinary operation, although useful in less accessible situations. Many of the illustrations are excellent, but we think Figures 27, 46, 61, 65 and 106 could be improved in a future edition, for they fail to represent what is intended; and the description of cancrum oris (page 135) might be revised. We commend the book very heartily, and congratulate the author on the way he has studied the copious literature.

Pneumothorax and Surgical Treatment of Pulmonary Tuberculosis. By CLIVE RIVIERE, M.D., F.R.C.P. Second Edition. Pp. xxii., 311. 9 illustrations, 16 plates. Oxford University Press. 1927. Price 10s. 6d.—"No more hopeful ray of sunshine has ever come to illumine the dark kingdoms of disease than that introduced into the path of the consumptive through the discovery of artificial pneumothorax." Yet it is extraordinary to think of the profound ignorance of many tuberculosis officers with regard to this proven form of treatment. This book clearly sets out the indications and contra-indications. A full account is given of cases treated, and the surgical operations at present in use are discussed. Dr. Riviere is an enthusiast, he is strongly against too early interference, but thinks it a pity that the intermediate period is so often let pass, and that the method is far too often used as a last resort. In such cases the mortality is necessarily high. We feel that the author fails to lay sufficient stress on the importance of sanatorium regime as an adjuvant; and might give a more detailed explanation of the skiagrams. Though there are other debatable points, this book ought to

be in the library of everyone, physician or surgeon, interested in the treatment of pulmonary tuberculosis.

Idiosyncrasies. By Sir HUMPHRY ROLLESTON, Bart., K.C.B., F.R.C.P. Pp. 119. London: Kegan Paul, Trench, Trübner. 1927. Price 2s. 6d. This is a small monograph which comprises within a space of about one hundred pages a brief tabulation of the various forms of "idiosyncrasies." The meaning of the word is discussed, and its association with psychic and physical states, the action of foods and drugs, and their reaction upon the skin and mucous membranes, etc. The book is eminently readable and comprehensive, as all of Sir Humphry Rolleston's writings are, and suggests some new ideas with regard to the possible association of gout and rheumatoid arthritis with allergy.

Aspects of Rheumatism and Gout. By L. J. LLEWELLYN, M.B. Pp. xiii., 295. London: William Heinemann. 1927. Price 10s.—With his usual masterly style, the author discusses these maladies from his own view-point, bringing out many interesting features, the result being a veritable classic of clinical philosophy. He is at great pains to expound the doctrine of diathesis, and in the chapter concerned with this matter brings forward many interesting and acceptable facts, showing a wide knowledge of biological detail. As suggested in the foreword, there is considerable overlap in several of the chapters, the constant reiteration of the theory of endocrine imbalance tending eventually to hypnotise the reader into acceptance. Even so, a good case is made out from this standpoint as regards the pathogeny of the rheumatic group of diseases—there is in the author's mind serious doubt as to the infective element in its ætiology, "its pathogeny cannot be pent up in the narrow compass of a septic tooth"—for him it results from a combination of factors, amongst which thyroid deficiency is to the fore, hand in hand with local metabolic disturbances. His discussions on the pitfalls of diagnosis are illuminating. The chapter on the prevention of rheumatism is full of sound judgment and of recommendations which should be of great benefit were they efficiently carried out. As regards gout, diathesis or individual susceptibility to external influences is again the keynote—"in gout, as in asthma, every man is a law unto himself." Altogether, a work promoting deep reflection, and inviting one to view the rheumatic group from a standpoint rather different from that which is customary.

Diseases of the Lungs. By F. E. TYLECOTE, M.D., F.R.C.P., and G. FLETCHER, M.D., M.R.C.P. Pp. viii., 270. London: Oxford University Press. 1927. Price 7s. 6d.—This is a comprehensive, well written little work, the authors showing throughout great practical knowledge of the subject. Their remarks on breath sounds and adventitious sounds are particularly happy and informative, and they indicate how the various types of breath sounds are really modifications of the sounds produced at the glottis, varying according to the conductivity of the lung tissues. These facts are usually not stressed enough in the ordinary text-books, the student thereby failing to understand the true significance of alterations in the respiratory murmur. A belated reference only is made to the treatment of bronchitis by vaccines, and not much faith is placed in this line of attack on bronchiectasis—under the ætiology of the latter condition, while it is claimed that one of the factors is an increased air pressure within the bronchi produced by coughing, it does not seem to be recognised that, given an intact thorax, there is a corresponding increase in pressure outside and around the bronchi. The rôle of anaphylaxis in the ætiology of asthma does not seem to be elevated to the prominence which it deserves, and treatment with peptone injections does not appear to find great favour; the antispasmodics and potassium iodide are the sheet anchors of general treatment. The diagnoses of empyemata and thoracic tumours are well discussed. The last chapter is devoted to pulmonary tuberculosis, the diagnosis of which is handled on sound common-sense principles, and the treatment and management of a case in a likewise commendable way. This book, presenting as it does certain facts in a way to make them the more easily appreciated, should certainly, as suggested in the preface, be most helpful and acceptable to the student and practitioner.

The Injection Treatment of Varicose Veins. By A. H. DOUTHWAITE, M.D., M.R.C.P. Pp. viii., 39. London: H. K. Lewis & Co., Ltd. 1927. Price 3s. net.—Though rarely a source of serious alarm or trouble, the cumulative effect of chronic pain from varicose veins cripples the nation's workers considerably. This disability exists despite our present means of treatment. In *The Injection Treatment of Varicose Veins* there seems a promise of great reductions in this silent suffering, borne largely by the weaker sex. Not that obliteration of varicose veins by chemical phlebitis is more effective than by operation, but its advantage is that

the treatment does not interfere with the patient's ordinary life, as the author says. His opinion is based on 2,000 cases. Such experience, and the lucid and scientific handling of his subject, make the book a good guide to a new remedy.

Social Factors in Medical Progress. By BERNHARD J. STERN, Ph.D. Pp. 136. New York: Columbia University Press. 1927. Price $2.25.—This volume forms one of a series of studies in history, economics and public law, edited by the Faculty of Political Science of Columbia University. The author divides his subject into two parts, of which the first deals with factors which retard the diffusion of innovations, and the second with the nature of progress in medicine. The retarding factors include vested interests, the power of tradition (always intensified by educational systems !), and reverence for authority. Dr. Stern gives interesting illustrations of the way in which even really great scientists may oppose novel scientific discoveries, instancing Virchow's refusal to see anything in Charcot's ataxic joint symptoms, and Simpson's opposition to Lister's discoveries. He has a short chapter on the opposition to dissection, full of historical peeps. He goes on to deal with the opposition to Harvey, to Auenbrugger, to Jenner, to the views of Holmes and Semmelweiss on puerperal sepsis, to Pasteur and to Lister. In the second part Dr. Stern is inclined to reject the idea that progress in medicine is represented by a series of wonderful jumps from one individual genius to another, and raises the question whether the discovery would not have been made irrespective of the individual who is now heralded as the discoverer. This is a delightful book, and none the less so for the solace it brings to the humbler folk who have never discovered anything.

Dermatological Neuroses. By W. J. O'DONOVAN, O.B.E., M.D., F.R.C.P. Pp. 99. London: Kegan Paul, Trench, Trübner. 1927. Price 2s. 6d.—In this short treatise an attempt is made to urge the "psychological element" in dermatological cases. Instances are adduced in which a psychic factor was plainly of importance in estimating the ætiology, and in directing the treatment of various dermatoses. So often is this psychic factor of paramount importance in the chronic pruritic dermatoses, that O'Donovan states that "the queue of waiting cases of lichen, chronic urticaria, and of half-diagnosed cases of eczema will be shortened if the emotional tone and psychological history of the patient are taken into account and turned to the patient's advantage."

Problems in Psychopathology. By T. W. MITCHELL, M.D. Pp. 190. London: Kegan Paul, Trench, Trübner & Co. 1927. Price 9s.—This book consists of lectures delivered before the British Institute of Philosophical Studies, chiefly upon the Freudian teaching. Dr. Mitchell regards psychology as a science of mind with no necessary relation to the physiology or anatomy of the nervous system. On this basis he states that medical psychology must confine itself to the description, classification and treatment of abnormal mental states. He deals first with hypnosis and hysteria, regarding them as phenomena of dissociation, which is the basis of Janet's theory of the neuroses, but Dr. Mitchell properly criticises this as giving no explanation as to why dissociation occurs in the particular way which we observe in any given patient. The explanation of this pathological process is to be found in the work of Freud, and most of the book is taken up in a review of Freud's doctrine, with more particular reference to its most recent development. He discusses the development of the ego and the super ego from the id, the differentiation of the life and death instincts and the ultimate analysis of the ego, as Freud deals with these problems. However, even Dr. Mitchell's customary lucidity does not make these theories very readily comprehensible; and since Freud takes no cognisance of other theories of instincts, or indeed of other teachers of psychology, comparison with his contemporaries is of no service whatever. It is claimed that these theories elucidate the behaviour of psychotic patients; but, because Freud has, or thinks he has, formulated a complete explanation of the psychoneuroses, we may ask whether he is justified in applying the same explanation to the psychoses as if the problem was entirely the same. Finally, Dr. Mitchell refers to divergencies from the psycho-analytic theory, and seems to regard them with scant respect. For those who wish to find a clear exposition of psycho-analytic doctrines presented in a relatively small compass, and in language as clear and simple as is compatible with scientific exactitude, the present volume may be confidently recommended.

Diathermy. By E. P. CUMBERBATCH, M.R.C.P. 2nd edtion. Pp. xiv., 332. 87 illustrations. London: William Heinemann Ltd. 1927. Price 21s.—The issue of a new and revised edition of this work is welcome in view of the rapid progress made in recent years in the medical and surgical uses of diathermy. It is probably the best book on the subject in the English language, and thoroughly up to date, both

in the technical and medical sections. The experience gained at St. Bartholomew's Hospital in the treatment of diseases peculiar to women and in gonococcal infections is fully dealt with, the part dealing with the surgical uses of diathermy has been enlarged, and an introductory account of the new "cutting currents" has been added. The print is good, and the book is well illustrated and indexed.

Exposures of Long Bones and other Surgical Methods. By ARNOLD K. HENRY, M.B., B.Ch., F.R.C.S.I., Professor of Clinical Surgery, Cairo. Pp. xii., 80. 51 illustrations. Bristol: John Wright & Sons, Ltd. 1927. Price 10s. 6d.—The first part of this small work deals with the surgical and anatomical problems of the complete exposure of the long bones. It is shown how this can be done so as to get the whole shaft of each bone laid bare with the least possible damage to the overlying soft structures. The methods employed in the case of the humerus, radius and femur are of great practical value, especially in those operations, *e.g.* bone grafting, where a wide exposure is essential to success. The other chapters deal chiefly with difficult anatomical problems in relation to surgical operations, *e.g.* the exposure of the plantar structures, a method of ligating the second stage of the vertebral artery, ligation of the first part of the left subclavian artery, resection of the left cervico-dorsal ganglion of the sympathetic and the approach to the pituitary gland under radiographic control. The work is a very good illustration of the value of a close association between anatomy and surgery. The new type of aneurism needle and the "pituitary gun" both display great mechanical ingenuity.

Outlines of Dental Science. V.: Dental Radiography. By C. A. CLARK, L.D.S. Pp. 97. Illustrated. Edinburgh: E. & S. Livingstone. 1927. Price 7s. 6d.—This little book takes its natural place in a very useful series of publications. Dental radiology has become part of the present-day student's routine study. This volume has the subject-matter concisely put together. It clearly outlines the apparatus used, and explains in a delightfully short manner the technique involved, both with the patients and the dark room. The various illustrations throughout the book very clearly bring home to the reader the points touched on in the various chapters. The writer wisely concludes his remarks with a chapter devoted to "Interpretation from the Negative."

Editorial Notes.

Sir Dawson Williams, Editor of the British Medical Journal, 1898-1928.

THE death of Sir Dawson Williams on February 27th cannot be allowed to pass unnoticed. He had resigned the Editorship of the *British Medical Journal* in December last, and instead of enjoying leisure at the end of his well-spent life, he died within a few weeks suddenly, but to himself not unexpectedly. His task as Editor of the *British Medical Journal* was not easy: the Journal has not only to publish articles which deal with the science and progress of medicine, it is the official chronicle of the proceedings of the Association and the organ to which every member turns to unburden himself of a message or a grievance. Dawson Williams used his great wisdom and rich experience wisely and generously. He would meet the criticism that papers of no scientific merit found place in the *British Medical Journal* by saying drily that he couldn't even be quite sure of the lasting value of the most scientific-looking communications, whilst the clinical experiences of the humblest practitioner might be useful. In reporting controversial discussions or in toning down embittered correspondence his influence was invaluable. Capable on occasions of forceful expression, he always tried to infuse dignity and generosity into controversy, for it was unavoidable that the Journal of the chief medical organisation of the Empire should sometimes deal with matters of dispute. Dawson Williams was well fitted to give written expression to the views, claims and hopes of the profession and the Association. In his hands the *British Medical Journal* set a high standard in

periodical medical literature and avoided the pitfall of becoming the mere mouthpiece of a trade.

Some public tribute to his qualities as an editor is his due, but Dawson Williams had other gifts and charms which will make him sorely missed as a companion and a friend.

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The New Country Hospital at Winford.

THE news that the Duke and Duchess of York have consented to lay the foundation stone of Bristol's new Country Hospital at Winford on July 7th has given great pleasure to those who have the interests of this project at heart. The immediate object of the hospital is to provide for the prolonged treatment, in a school-hospital, under the best conditions available, of chronic crippling disease in childhood. As this includes crippling heart disease, the hospital is brought into vital connection with the organisation for dealing with rheumatic heart disease which is growing up not in Bristol only, but also in the surrounding counties. For its support this hospital will depend mainly on grants—of which it is assured—from the Bristol Education Committee, and, it is hoped, from other local authorities whose children are treated there. Capital is still needed to provide for the building, as the Bristol Crippled Children's Society and the Bristol Orthopædic Hospital (who have pooled their interests for the sake of this conjoint undertaking) have thought it wise to buy a site large enough to prevent any likelihood of the hospital being built in, and also to allow of country annexes being added by the other Bristol hospitals as these become necessary. The possibility that this project might constitute an excellent form of war memorial for the city, which has

been discussed, has much to be said in its favour, as much on the score of appropriateness as on that of utility, and it is to be hoped that it will be fully considered by the responsible authorities.

* * * * *

The Royal Medico-Psychological Association.

DURING February the Royal Medico-Psychological Association held a meeting in Bristol. At the dinner at the Royal Hotel on the 15th Professor G. M. Robertson spoke in terms of high praise of the University buildings, which the members of the Association had visited that afternoon, and expressed an earnest hope that the teaching of psychology might be taken up seriously and thoroughly in the Bristol School of Medicine.

Professor Nixon, in replying, assured the Association of the University's interest in the matter, pointing to the lectureship held by Dr. Barton White and the consultative psychiatric clinic presided over by Dr. Blachford at the General Hospital as evidences of this interest. On the following day the Association met at the Bristol Mental Hospital, Fishponds, and after a business session and lunch, at which the Lord Mayor of Bristol and the Registrar of the University were present, heard and discussed scientific papers.

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Conference on Rheumatic Diseases.

A CONFERENCE on Rheumatic Diseases is to be held at Bath on Thursday and Friday, May 10th and 11th, 1928. Sir George Newman, Chief Medical Officer of the Ministry of Health, has kindly consented to act as President of the Conference. There will be three sessions: (1) Social

Aspects, presided over by Lord Dawson of Penn; (2) Causation, presided over by Sir Humphry Rolleston (Regius Professor of Physic, Cambridge); and (3) Treatment, presided over by Sir E. Farquhar Buzzard (Regius Professor of Medicine, Oxford). Many of the leading medical authorities have promised to contribute papers on the special phases of the subject upon which they are specially qualified to speak, and it is hoped that the Conference may be the means of throwing fresh light on some of its most pressing problems. The local Hon. medical secretary is Dr. Vincent Coates, 10 The Circus, Bath.

Meetings of Societies.

Bristol Medico-Chirurgical Society.

December 14th, 1927.

DR. W. K. WILLS, President, in the Chair.

DR. D. A. ALEXANDER showed a case of a young woman with a **Tumour in the Left Hypochondrium,** present three years. He suggested it was a fibroma attached to the abdominal wall.

DR. BUSH showed a number of skiagrams, including a group of six cases showing positional abnormalities of the large intestine producing marked symptoms (in several suggestive of carcinoma), symptoms which were largely or entirely relieved by judicious abdominal massage and exercises.

DR. A. D. FRASER showed pathological specimens, including one of desmoids (*i.e.* chronic inflammatory tumours) of the abdominal wall.

MR. E. WATSON-WILLIAMS showed two specimens of **Bony Ankylosis of Malleus and Incus,** one of them exhibiting osteophytic outgrowths on both bones. The condition had not been suspected prior to the removal of the bones at operation.

DR. H. H. CARLETON read a paper on **"Problems of Hæmoptysis in Pulmonary Tuberculosis,"** reported on page 39.

MR. H. CHITTY read a paper on **"Intussusception,"** reported on page 51.

January 11th, 1928.

DR. W. K. WILLS, President, in the Chair.

DR. T. MILLING showed a case of **Sebaceous Cyst of the Scrotum,** with a tumour in one groin.

DR. F. G. BERGIN showed a number of skiagrams illustrating pulmonary lesions.

DR. A. E. ILES showed a woman with a **Melanoma of the Eyeball,** visible in all three classical positions ; it had produced no symptoms, and was discovered during the search for a foreign body.

DR. J. A. NIXON read a paper on **"Gastric and Duodenal Ulcer in Infants."**

He related the case of a child eleven weeks old who had died in the Royal Infirmary of hemorrhage from a chronic gastric ulcer situated half in the stomach and half in the œsophagus. Giving a brief survey of the not inconsiderable literature on this subject, he pointed out that acute ulcers of the stomach, duodenum and even of the œsophagus were not so very rare in the new-born, but that instances of chronic ulcers were less common. In particular he referred to Cruveilhier's illustrations of ulceration of the stomach in the new-born, and quoted Landau's conclusions as to the causation of these ulcers, in which that author remarked that they were usually due to injuries of some kind during birth, especially asphyxia, and stated that almost all cases of uncomplicated *Melæna neonatorum* depended on ulcer of the stomach or duodenum. Kundrat had observed that these ulcers are occasioned by minute hemorrhages.

Dr. Nixon referred to two cases on record (Alsberg in 1920 and Palmer in 1921) where operations had been successfully performed.

The diagnosis of ulcer might be suspected in any case of melæna neonatorum unaccompanied by hemorrhage in other situations. Chronic cases were likely to be attended by marasmus, vomiting and signs of pain associated with food. If in addition to these signs hæmatemesis or bleeding from

the bowel occurred the diagnosis of gastric or duodenal ulcer was almost certain.

DR. A. D. FRASER showed the specimen of the stomach from Dr. Nixon's case, and also the stomach of a child five days old which showed an acute ulcer of the duodenum.

Dr. Fraser said that the bulk of animal experiments threw no light on the subject. Recent work, however, had shown that following the injection of foreign proteins in animals gastric and duodenal ulcers were found. He thought that partial asphyxiation might provide a toxic factor in these children, and reminded the meeting that for the first three days of life every child was a potential hæmophilic.

DR. D. C. RAYNER said he was very interested in the association of this condition with asphyxia neonatorum, which was quite new to him, and asked if asphyxia had been noted in Dr. Nixon's case. In his experience the mortality of melæna neonatorum was about 60 per cent.

MR. T. CARWARDINE said that he regarded the ulceration as due indeed to a toxic factor, but by direct action on the gastric mucosa.

MR. H. J. DREW SMYTHE pointed out that there was some degree of asphyxia in all births. He did not think asphyxia explained why these very few children suffered from gastric ulcer. He had himself seen only five cases of melæna neonatorum, with no death.

DR. CAREY F. COOMBS inquired as to the occurrence of duodenal ulcer after burns in children.

DR. NIXON replied.

MR. G. R. SCARFF read a paper on **"The Incidence of Tuberculous Infection in the Faucial and Nasopharyngeal Tonsils of Children,"** a summary of which is as follows :—*

Mitchell in Edinburgh in 1916 found the incidence of tuberculous foci in tonsils removed from children for causes other than obvious tuberculous adenitis to be 9 per cent., while Weller in America in 1921 found lesions in 1·64 per cent.

To ascertain whether Mitchell's figures continued to be found in other parts of Britain at the present time a histological examination was carried out at the Middlesex Hospital of the tonsils from 100 children who attended the hospital for routine

* The full account of this work appears in the *Journal of Laryngology*, 1927.

tonsillectomy after the usual clinical examination. Of these 2 per cent. were found to show the presence of tuberculous foci.

In a further 100 cases the tonsils and the adenoid tissue were examined histologically, and in addition Dr. Whitby, bacteriologist at the hospital, carried out animal inoculation experiments in each case. In this series 2 per cent. of the tonsils and 2 per cent. of the adenoids were found to be tuberculous.

Except in one case in which the affected tonsil was much larger than the other, there was nothing in the appearance of the tonsils to be found clinically to point to tuberculous infection. All the children in both series showed enlargement of the tonsillar glands, in half the cases other glands in the anterior triangles were also enlarged. and in 11 per cent. the upper glands in the posterior triangles showed enlargement. In two of the positive cases the glandular enlargement was diagnosed clinically as tuberculous before operation, and these cases subsequently required operation for their removal. These cases emphasise the necessity for tonsillectomy in cases where tuberculous glands require to be removed, as otherwise a focus of infection remains active. The after history of the other cases showed that tonsillectomy brings about improvement where the glandular condition is early.

Inquiring into the reasons for the discrepancy in results, it was found that during the period of Mitchell's researches (war conditions) 20 per cent. of samples of milk taken in Edinburgh were positive for tubercle bacilli, 90 per cent. of the children were bottle fed, and it was the exception to boil the milk. In the present series 52 per cent. were bottle fed, and in only 6 per cent. was the milk unboiled.

The decrease can therefore be attributed in part, if not wholly, to improvement in the milk supply, and to the education of the public with regard to the danger of infected milk.

A further effect of this is to be found in the decrease in the number of patients requiring operative treatment for tuberculous adenitis—less than two-thirds the number in 1916, which must be largely due to the same cause, although not wholly comparable owing to the advance in conservative methods of treatment.

This paper was discussed by the President, Dr. Carleton, Mr. Wright, Mr. E. Watson-Williams, Mr. Adams, Mr. Claremont, Professor Nixon, Dr. Hadfield, Mr. Jackman and Dr. Alexander. Dr. P. Watson-Williams contributed a letter of welcome to Mr. Scarff, also expressing his views on the subject under discussion.

The Medical Library of the University of Bristol,

WITH WHICH IS INCORPORATED

The Library of the Bristol Medico-Chirurgical Society.

The following donations have been received since the publication of the List in December, 1927.

January, 1928.

Dr. T. S. Cullen (1)	1 volume
Professor E. W. Hey Groves (2)	6 volumes
Michell Clarke Memorial Fund (3)	20 ,,
Miss Rudge (4)	1 volume

Unbound periodicals have also been received from Colonel P. Bush, Dr. Carey Coombs, Dr. C. Corfield, Professor E. W. Hey Groves, Dr. F. S. Hunter and Miss H. B. Murgoci.

THE ONE HUNDRED AND TWENTY-THIRD LIST OF BOOKS.

The figures in round brackets refer to the figures after the names of the donors. The books to which no such figures are attached have either been bought from the Library Fund or received through the *Journal*.

Bainbridge, F. A., and Menzies, J. A. *Essentials of Physiology.* 5th Ed. (3) 1925
Bauer, K. H. .. .. *Frakturen und Luxationen* .. .. (2) 1927
Brend, W. A. .. *Handbook of Medical Jurisprudence.* 5th Ed. (3) 1924
Clark, A. J. .. .. *Comparative Physiology of the Heart* .. .. (3) 1927
Cockayne, O. .. .. *Leechdoms, Wortcunning and Starcraft.* Vol. I. (4) 1864
Cullen, T. S. .. .. *Early Medicine in Maryland* .. .. (1) 1927
East, W. N. .. .. *Forensic Psychiatry* .. .. (3) 1927
Eden, T. W., and Holland, E. *Manual of Midwifery* .. 6th Ed. (3) 1925
Finlayson, J. .. .. *Clinical Manual* .. .. 4th Ed. (3) 1926
Fuchs, J. .. .. .. *Technische Operationen in der Orthopädie* .. (2) 1927
Gibson, A. G., and Collier, W. T. *Methods of Clinical Diagnosis* .. (2) 1927
Gwathmey, J. T. .. *Anæsthesia* .. .. 2nd Ed. (3) 1925
Harrison, L. W. .. *Venereal Diseases* .. .. 3rd Ed. (3) 1926
Henderson, D. K., and Gillespie, R. D. *Textbook of Psychiatry* .. (3) 1927
Henry, A. K. .. .. *Exposures of Long Bones* 1927
Holt, L. E., and Howland, J. *Diseases of Infancy and Childhood.* 9th Ed. (3) 1926
Hutchison, R. .. .. *Food and the Principles of Dietetics* .. 6th Ed. (3) 1927
Ker, C. B. .. .. .. *Manual of Fevers* .. .. 3rd Ed. (3) 1927
Kleinschmidt, O. .. *Chirurgische Operationslehre* .. .. (2) 1927
Léri, A. .. .. .. *Études sur les Affections des Os* .. .. .. (2) 1927
Leveuf, J., et Girode, Ch. *Le Traitement des Fractures du Col du Femur* (2) 1927
Osler, W., and McCrae, T. *Modern Medicine.* 5 Vols. .. .. 3rd Ed (3) 1925-7
Queen Charlotte's Practice of Obstetrics, The .. .. (3) 1927

Rawling, L. B. .. *Landmarks and Surface Markings of the Human Body* .. .. 6th Ed. (3) —

Romanis, W. H. C., and Mitchiner, P. H. *The Science and Practice of Surgery.* Vol. II. (3) 1927

Rowlands, R. P., and Turner, P. *The Operations of Surgery.* Vol. II. 7th Ed. (3) 1927

Short, A. R. .. .. *New Physiology* .. .. 5th Ed. (3) 1922

Stern, B. J. .. .. *Social Factors in Medical Progress* 1927

Stitt, E. R. .. .. *Practical Bacteriology and Blood Work and Animal Parasitology* .. .. 8th Ed. (3) 1927

Thomson, J. .. .. *Clinical Study and Treatment of Sick Children.* 4th Ed. (3) 1925

Williams, G. .. .. *Minor Surgery and Bandaging.* 19th Ed. (2) 1927

TRANSACTIONS, REPORTS, JOURNALS, ETC.

Boletin del Instituto Clinica Quirurgica. Ano III. (1927. Nos. 21-25) (2) 1927

British Journal of Surgery, January, 1928 1928

Churchill's Medical Directory 1928

Methods and Problems of Medical Education. 8th Series 1927

Progressive Medicine. Vol. 4. December, 1927 1927

Smithsonian Institution—Annual Report, 1926 1927

Surgical Clinics of North America. Vol. 7, Nos. 5 and 6.. 1927

Transactions of the Association of American Physicians. Vol. 42 1927

Local Medical Notes.

We deeply regret to announce the death of Mr. J. P. I. Harty, which occurred on March 5th, 1928. An Obituary Notice will appear in our next issue.

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